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CAPREOLUS ON ESSENCE
AND EXISTENCE

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It is news to no one that research in medieval philosophy has achieved and is achieving fruitful results not only for our understanding of that period alone but also for our understanding of the Greco-Roman period and the early modern period. No small part of that research has been devoted to the thought of St. Thomas Aquinas, a fact which is certainly responsible for the vitality of Thomism in our day. One interesting aspect of this vitality is manifested in what has recently been termed the "purgative way"¹ of modern Thomism. Such a catharsis was certainly the purpose of Father W. Norris Clarke, S.J., in his article "What is Really Real?"² His request for critical explorations of his thesis³ has been accepted by at least two scholars, Father Edmund W. Morton, S.J.,⁴ and, more recently, Father James I. Conway, S.J.⁵

It is the purpose of this paper to add to the historical background of Father Clarke's original paper by an examination of a very influential exponent of the position he has criticized. This exponent is one of the *Thomistae*,⁶ the *Princeps Thomistarum*, John Capreolus.⁷ The place and date of his birth are considered to be Rodez in France about 1380. He entered the Dominican order and was reading the *Sentences* at Paris in 1409. His teaching career took him to many Dominican convents, one of which is Toulouse. He died at Rodez in 1444. The work upon which his fame rests is his *Defensiones Theologiae Divi Thomae Aquinatis*.⁸ It must be realized that with Capreolus we are at the confluence of the Thomism of the primitive Thomists and the Thomism of the later classic commentators. We are dealing with a

man inspired by such persons as Hervaeus Natalis, Peter Marsh, Bernard of Auvergne, and John of Naples, and who in turn inspires such later classic Thomists as Cajetan, Sylvester of Ferrara, Javellus, and Soncinas.⁹

¹Joseph Owens, C.S.S.R., *St. Thomas and the Future of Metaphysics* (Milwaukee: Marquette Univ. Press, 1957), p. 51. Note also C. Fabro, "L'Obscurcissement de l'esse dans l'école thomiste," *Revue Thomiste*, LVIII (1958), 443-78.

²See *Progress in Philosophy* (Milwaukee, 1955), pp. 61-90. Note also Father Clarke's commentary on Father Phelan's paper in the *Proceedings of the American Catholic Philosophical Association*, XXXI (1957), 128-32.

³*Progress in Philosophy*, pp. 89-90.

⁴See "The Nature of the Possible According to St. Thomas Aquinas," *Proceedings of the American Catholic Philosophical Association*, XXXII (1958), 184-89.

⁵See "The Reality of the Possibles," *New Scholasticism*, XXXIII (1959), 139-61; 331-53.

⁶Without involving itself directly in the dispute between Fathers Clarke and Conway, this examination will afford data for an ultimate assessment of that unavoidable and radical tension in "traditional Thomism" which is the subject of the above controversy. See Father Clarke's answer to Father Conway, "The Possibles Revisited: A Reply," *New Scholasticism*, XXXIV (1960), 79-102.

⁷Martin Grabmann, "Johannes Capreolus, o.p., der 'Princeps Thomistarum' (d. 7 April 1444) und seine Stellung in der Geschichte der Thomistenschule," *Divus Thomas* (Fribourg), XXII (1944), 85-109 and 145-70; Johannes Hegyi, s.j., *Die Bedeutung des Seins bei den klassischen Kommentatoren des heiligen Thomas von Aquin: Capreolus, Silvester von Ferrara, Cajetan* (Pullach: Verlag Berchmanskolleg, 1959), pp. 9-15.

⁸*Defensiones Theologiae Divi Thomae Aquinatis*, ed. Paban-Pègues (7 vols. Turin: Alfred Cattier, 1900). To facili-

tate reference, volume, page, and column will be indicated.

⁹A. Krempel, *La doctrine de la relation chez Saint Thomas* (Paris: J. Vrin, 1952), p. 30.

¹⁰*Def. Theol.*, Vol. I, p. 1a. It is noteworthy that a change in the structure of the traditional *quaestio* has taken place. Instead of a *respondeo* wherein the resolution of the question takes place, the conclusion is posited initially and arguments are then marshalled in its defense. This would seem to indicate that Capreolus is not so much establishing his positions but defending positions which are to him a philosophical heritage. And that this should alter the basic structure of the *quaestio* is only natural.

Moreover, that this method of Capreolus's will offer difficulty for anyone attempting to divine his interpretation of the text or texts of St. Thomas will become all too apparent as we proceed. Note the lament of J. Hegyi: "Wie ist es aber unter diesen Verhältnissen möglich, die persönliche Meinung des Capreolus herauszuarbeiten?" (*Bedeutung des Seins*, p. 14).

For an indication of Capreolus's appreciation of the *Summa Theologiae* of St. Thomas in relation to the latter's *Scriptum* and other works, see *Def. Theol.*, Vol. IV, p. 38a. For Capreolus, "... *Summa* est quasi liber retractatorium . . ." Reference to this text as well as to others in the same vein will be found in M. Grabmann, "Johannes Capreolus, o.p.," pp. 95-97; J. Hegyi, *Bedeutung des Seins*, pp. 14-15.

¹¹*Def. Theol.*, In I Sent., d. 8, q. 1, a. 1, Vol. I, p. 301b. The way in which Capreolus chooses to pose the question is historically significant. For he has asked, "Utrum creatura subsistens sit suum esse existentiae?" This manner of posing the question is reminiscent of the Avicennian tradition embodied in

By way of an over-all appreciation of Capreolus's purpose in writing his work we are fortunate in having his own description of his task. It is his avowed purpose to put forth nothing of his own but to reproduce the positions he thinks are according to the mind of St. Thomas. With rare exceptions, moreover, he intends to use St. Thomas's own words in proof of any conclusions. The same method of using St. Thomas's own words is to be used in solving the objections of the opponents of St. Thomas.¹⁰

The section of Capreolus's work most suitable for achieving the purposes of this paper (and incidentally for seeing a concrete application of his method of defending St. Thomas by using St. Thomas) is the place where he raises the question of the distinction between essence and existence.¹¹ His treatment of such a question is rather elaborate, including the citation of numerous authorities who deny that a subsisting creature is its own *esse existentiae* and one argument *in oppositum*,¹² the purpose of all of this being to introduce five distinct

Henry of Ghent and others, and is not the terminology of Capreolus's avowed master, St. Thomas. On this see Joseph Owens, c.s.s.r., "The Number of Terms in the Suarezian discussion on Essence and Being," *THE MODERN SCHOOLMAN*, XXXIV (1957), 152, n. 17; 160, n. 30; and C. Fabro, "L'Obscurcissement de l'esse," *passim*. Note also Father Owens in *St. Thomas and the Future of Metaphysics*, p. 83, n. 39; p. 86, n. 40.

¹²*Def. Theol.*, Vol. I, p. 301b. A striking similarity in the citation of authorities on this question is found in Petrus Aureolus, *Scriptum super Primum Sententiarum*, I, d. 8, q. 21, ed. E. M. Buytaert (St. Bonaventure, N.Y.: Franciscan Institute, 1956), Vol. II, pp. 884-85. Capreolus's use of Aureolus's commentary has been noted by Capreolus's editors (p. xxii). This is certainly the case with the *Argumenta Godofridi* (Godfrey of Fontaine), which Capreolus lists as contrary to his first conclusion (*Def. Theol.*, Vol. I, p. 317ab). Aureolus's rendition of some arguments of Godfrey may be found, *Scriptum super I Sent.*, ed. Buytaert, pp. 889-90. Moreover, in addition to

using Aureolus as a source for the positions of the adversaries of St. Thomas, Capreolus also uses Aureolus as a source of arguments against some of their mutual opponents. For, in answering *argumenta aliorum*, one of whom seems to be Henry of Ghent, Capreolus notes: ". . . immo videtur implicari contradictio in dictis istorum, ut probat unus alius Doctor . . ." (*Def. Theol.*, Vol. I, p. 330b). The latter is Aureolus arguing against Henry of Ghent. Cf. Aureolus, *Scriptum super I Sent.*, Vol. II, p. 904, no. 75.

The argument *in oppositum* noted at the outset of this note is quoted by Capreolus again as the ninth argument of Godfrey of Fontaine (*Def. Theol.*, Vol. I, p. 317b), but in reality it is an argument of Aureolus against the real distinction between essence and existence (*Scriptum super I Sent.*, Vol. II, p. 898).

Capreolus, in his answer (*ibid.*, Vol. I, p. 327a) notes that ". . . major a multis multipliciter glossetur . . ." which seems to indicate that it was a much discussed argument.

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conclusions bolstered by suitable arguments.¹³ This constitutes the first article. The second article contains the arguments of the adversaries of the foregoing conclusions and Capreolus's answer to them.¹⁴

¹³The following conclusions are stated. 1. "Prima conclusio: Nulla creatura subsistens est suum esse quo actu existit in rerum natura." 2. "Secunda conclusio principalis hujus articuli est ista: Quod esse creaturae non sic se habet ad illud quod est, vel ad quidditatem creaturae, omnino consimiliter sicut forma substantialis ad materiam." 3. "Tertia conclusio est quod esse existentiae non se habet omnino similiter ad substantiam vel essentiam creaturae sicut accidens ad subjectum, accipiendo accidens proprio pro quidditate accidentali reposita in aliquo novem generum accidentis." 4. "Quarta conclusio est quod esse creaturae, quo formaliter est actu, non est Deus, nec est proprie creatura, nec est proprie ens vel quod est." 5. "Quinta conclusio est quod aliquod esse est ipsa essentia creaturae, aliquod vero esse est actualitas ejus, et aliquod esse non est hoc nec illud" (*ibid.*, Vol. I, pp. 301, 312-14).

¹⁴"In hac quaestione erunt duo articuli. In primo quorum ponentur conclusiones. In secundo vero, adversariorum objectiones" (*ibid.*, Vol. I, p. 301). As a rule Capreolus divides the *objectiones* of his adversaries and his own *solutiones* according as they concern each of his conclusions. But in this instance Capreolus cites only the arguments against his first conclusion.

¹⁵*Ibid.*, Vol. I, pp. 301a, 305b, 306a, 307b, 308b, 310b. On the basis of the sixth argument Capreolus derives a very brief *novum argumentum*. With the exception of the sixth and seventh arguments, each argumentation takes its point of departure from a text of St. Thomas from the *Summa contra Gentiles*, II, cap. 52. The sixth argument uses a text from St. Thomas's *Commentary on the Sentences* and the seventh cites his second *Quodlibet*. In each case, the text of St. Thomas is followed by an argument in opposition which Capreolus will answer.

¹⁶From a remark of T. Pègues, "La biographie de Jean Capréolus," *Revue Thomiste*, VII (1899), 330, I gather that I am not the first to make this remark; nor need it be taken in a derogatory sense, for a mosaic can be and often is a work of high artistic quality. Indeed, Capreolus's synthesis is all of a piece rather than being an artificial juxtaposition of texts, for these citations are quickened from within by that very personal existence which the intelligibility of such texts have in the mind of Capreolus.

¹⁷This text as cited by Capreolus reads slightly differently in its Leonine edition. See *Summa contra Gentiles*, II, cap. 52 (ed. Leonine Manual [Rome, 1934], p. 145b). I think that the substance of this text is to be found in St. Thomas's *De Ente et Essentia*, cap. 4 (ed. Roland-Gosselin, p. 35), where the context is the same as in *Contra Gentiles*, II, cap. 52—essence and esse in the separate substances. This is reiterated in *Summa Theologiae*, I, q. 3, a. 4 (Ottawa, I, 18a-19b). Even the classical text *In IV Metaphys.*, lect. 2 (Cathala, No. 558) avows the same position: "Esse enim rei quamvis sit aliud ab ejus essentia, non tamen est intelligendum quod sit aliquod superadditum ad modum accidentis, sed quasi constituitur per principia essentia." All agree in stressing the formal causality of essence and either indicate, as the first three, or imply, as the last one, that the esse is due to an efficient cause. The analogy of light, air, and sun, apparently inspired by St. Augustine, is used frequently by St. Thomas to describe the relation of God and creature. See *ST*, I, q. 104, a. 1c, and especially ad 1, (Ottawa, I, 623a-b); *De Ver.*, q. 5, a. 2 ad 6 (ed. R. Spiazzi in *Quaest. Disp.* [Turin: Marietti; 1949], I, 93); *In III Sent.*, d. 6, q. 2, a. 2 resp. (ed. Moos, III, 238); *Contra Gentiles*, II, cap. 54 (ed. Leonine, XIII,

Of interest to us here is Capreolus's defense of his first conclusion, that no subsisting creature is its own *esse*, the act by which it exists in reality. More especially, since he proves this conclusion with no less than six lengthy arguments,¹⁵ our concern is with his first argument as this is relevant to the tradition criticized by Father Clarke and alluded to by Father Conway.

At first glance Capreolus's first argument is a rather elaborate mosaic¹⁶ of authoritative texts, each purportedly complementing one another and, unfortunately, with but sparse commentary on the part of Capreolus; this last is offered by way of replies to objections. For example, four explicit texts of St. Thomas are cited, only one of which is explicitly concerned with essence and existence. St. Albert, Aristotle, Robert Grosseteste, St. Augustine, and Averroes come in for one or more citations. The difficulty that such a mosaic offers to any analysis is obvious. But when Capreolus literally hides behind his authorities and gives but sparingly of his commentary, the difficulties of analysis are appreciably enhanced. Still, to grasp in some way that personal existence which these texts have in the mind of Capreolus, we must lift each piece out of its setting, scrutinize it carefully, and replace it again within the complete design of the whole.

The first text cited by Capreolus is that of St. Thomas: "Substantia uniuscujusque est ei per se, et non per aliud; unde esse lucidum actu non est de substantia aeris, quia est ei per aliud. Sed cujuslibet rei creatae esse est ei per aliud; nam alias non esset creatum. Nullius igitur substantiae creatae suum esse est sua essentia."¹⁷ This terse

392a, 20-25). From an analysis of such texts, Father Owens, in *St. Thomas and the Future of Metaphysics*, p. 90, n. 47, notes: "This comparison shows clearly how St. Thomas conceives the principles of the essence as causing being only in the line of formal causality, and even then presupposing the efficient causality of the agent." And he also notes in "The Accidental and Essential Character of Being in the Doctrine of St. Thomas Aquinas," *Mediaeval Studies*, XX (1959), 21: "The only conceivable way in which this doctrine can make sense is to regard being as somehow prior to essence. If

being were subsequent to essence it would be a predicamental accident."

It is interesting to note that Capreolus cites the text of St. Thomas from *In IV Metaphys.*, lect. 2 (Cathala, No. 558) on behalf of this third conclusion (*Def. Theol.*, Vol. I, pp. 313-14). He alludes to it again in answering the twelfth argument of Aureolus (*Def. Theol.*, Vol. I, p. 330a).

Just how Capreolus understands this formal constitution is alluded to in his answer to the third argument of Gerard of Carmel (*ibid.*, Vol. I, p. 322a). Further clarification can be found in the

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and cryptic text is but one argument of St. Thomas within the larger context of other arguments, all purporting to show that *esse* and *quod est* are not identical in the angels (*in substantiis intellectualibus creatis*). Thus, it is certainly relevant to the initial conclusion put forth by Capreolus. As to content, it is important to realize that the stress and major emphasis is laid on *esse* and its *per aliud* characterization. For a contrast is established between the substance or essence of a thing which belongs to a being *per se et non per aliud* and the *esse* of any created thing which belongs to such a being *per aliud*. In the same way *esse lucidum actu* does not belong to air *per se* but is present to it *per aliud*. Hence, it is indicated that *esse* is not the essence or an essential attribute, but accrues to a being from something outside the essence (*per aliud*). If such were not the case, it would not be a creature. The terms in need of clarification are St. Thomas's use of *per se* and *per aliud*. They would seem to indicate, by reason of the use of *per*, a contrast of causal relationships, one intrinsic, *per se*, and the other extrinsic, *per aliud*. That is, *per se* indicates an intrinsic formal cause and *per aliud* indicates an extrinsic efficient cause.¹⁸ The

answer to the sixth argument of Godfrey of Fontaine (*ibid.*, Vol. I, p. 317a and p. 326a) which does not belong to Godfrey at all but is an argument of Aureolus *in oppositum* the arguments for a real distinction between essence and existence (*In I Sent.*, d. 8, q. 21 [ed. Buytaert, II, 891, no. 35]).

¹⁸"Esse creatum non est per aliquid aliud, si ly 'per' dicat causam formalem intrinsecam; immo ipso formaliter est creatura; si autem dicat causam formalem extra rem vel causam effectivam, sic est per divinam esse et non per se" (*In I Sent.*, d. 8, q. 1, a. 2 ad 2 [ed. Moos, I, 198]).

The *ab alio* characterization of *esse* in the *De Ente* text cited in the preceding note also is indicative that *esse* is *per aliud*: "... istae prepositiones 'a' et 'per', in hoc differunt; quia 'a' designat tantum habitudinem principii per modum efficientis; sed 'per' designat habitudinem principii secundum quodlibet genus causae; unde omne illud quod est ab aliquo est per illud: sed non convertitur" (*In I Sent.*, d. 32, q. 2, a. 2, sol. 1 [ed. Moss, I, 754]).

For Capreolus *per se* indicates an exclusion of the many ways in which a thing can be said to be *per aliud*: "Ad primum (Henrici) quidem, quod ly *per se* potest excludere tamquam subjectum vel receptivum; et tunc conceditur quod aliquod creatum est ens *per se*; sicut substantia, quae non est ens *per aliud* susceptivum, et ideo dicitur ens *per se*. Linconiensis, 1. *Poster.*, cap. 4, dicit: 'Dicitur autem *per se* esse quod *per efficientem* causam non est; sic sola prima causa *per se* est. Dicitur secundo *per se* esse quod *per causam materialem* non est; et sic dicuntur intelligentiae *per se* entes vel *per se* stantes. Dicitur etiam *per se* esse quod *per subjectum* non est; et sic dicitur omnis substantia *et sola per se esse*.'—Haec ille.

"Alio modo, ly *per se* potest excludere *per aliud* tamquam formale; et sic, nec essentia substantiae, nec accidentis essentia, est ens *per se*; sed *per aliud* formaliter, scilicet *per esse*; et hoc, loquendo de ly ens prout est participium et significat tantum quantum hoc quod dico existens. Isto modo enim quaelibet essentia creata est ens

reason why air is air—to enlarge upon St. Thomas's example—and is endowed with its essential characteristics is not explained by something extrinsic to the essence (*et non per aliud*). It is explained by the essence itself—*per se*. The reason why air is, or is actually illumined, is not due to the essence and is not an essential attribute but is explained by something extrinsic to the essence—*per aliud*. In short, beings manifest the presence of an intrinsic formal cause and the presence of an extrinsic efficient cause. Each performs its own task in its own order of causality, contributing to the ultimate constitution of the concrete existent, the composite of essence and existence. But, granted that *per se* indicates an intrinsic formal cause, does such an expression explicitly deny, with respect to the essence or substance of a thing, that the essence comes to be by an intrinsic efficient cause? Does such an expression positively exclude the essences of creatures from any and all impact of an efficient cause such that the *per se* character of essence persists apart from *esse*? Does *per se* mean that the essences of creatures are so impervious to an efficient cause that they are radically uncreated and only their *esse* is truly created?¹⁹

per aliud et non per se, prout ly per se excludit formale, et non solum susceptivum illius quod est."

¹⁹I think St. Thomas's own position on the question of an uncreated essence is clear, for he posed the very question to himself and answered it: "Omnia quae a Deo sunt facta, dicuntur esse Dei creaturae. Creatio autem terminatur ad esse; prima enim rerum creaturarum est esse, ut habetur in libro *de Causis*. Cum igitur quidditas rei sit praeter esse ipsius, videtur quod quidditas rei non sit a Deo" (*De Pot.*, q. 3, a. 5, obj. 2 [Turin: Marietti, 1953; II, 48]).

St. Thomas replies: "Ex hoc ipso quod quidditati esse tribuitur, non solum esse, sed ipsa quidditas creari dicitur; quia, antequam esse habeat, nihil est, nisi forte in intellectu creantis, ubi non est creatura, sed creatrix essentia." See also St. Thomas's reply *ibid.*, a. 1 ad 17 (II, 41).

That the objection should quote the *Liber de Causis* in defense of its position offers an interesting parallel with

Capreolus's citation of St. Albert's commentary on this same work (*Def. Theol.*, Vol. I, p. 302 ab). In each case the doctrine of an uncreated essence is concluded. Moreover, it is still more interesting that this argument finds its proper context in the world of Avicennian thought. Cf. Beatrice Zedler, "St. Thomas and Avicenna in the *De Potentia Dei*," *Traditio*, VI (1948), 105-9 and Gerard Smith, s.j., "Avicenna and the Possibles," *New Scholasticism*, XVII (1943), 340-57, where on page 349 it is noted: "Here it is pertinent to sharpen St. Thomas' point by asking, Exactly what is the status of that-which-can-be in relation to God? The answer might be indicated in this way: St. Thomas cannot even be asked the question. Avicenna can be asked, and we have seen his answer: a possible is a datum, given to, but not by, God; he cheerfully but necessarily wills it into existence. St. Thomas' possible being, however, is not a buffer state between existents and God. What indeed could

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Capreolus, for the moment, does not immediately confront such questions. For, in lieu of a direct explanatory comment of his own, he complements this text with a lengthy citation from St. Albert, since the latter argues in a manner similar to St. Thomas.²⁰ In this text

this buffer state be, which is without existence and yet is not God? Hence, the question cannot be asked, because there is nothing to ask it about." We shall have occasion later to indicate that Capreolus knows the *De Potentia* text of St. Thomas but glosses it in a very unusual fashion. For now let it be noted that Capreolus is also aware of a variation on the objection in the *De Potentia* which utilizes the same text of the *Liber de Causis*. It is an argument cited by Aureolus on behalf of the real distinction between essence and existence, as the tradition "... Avicennae et Thomae et Aegidii et plurium aliorum . . ." which Capreolus certainly knows (see n. 12 *supra*): "Praeterea, quandocumque aliqua realis actio terminatur ad aliquid et non terminatur ad aliud, illa non possunt poni eadem res. Si enim sunt eadem res, quacumque actione reali unum attingitur et reliquum. Sed creatio est realis productio. Non attingit autem essentiam, quia Deus non facit hominem esse hominem aut esse essentiam, sed facit hominem esse et essentiam esse, secundum quod dicit auctor *De causis* in quarta propositione quod 'prima rerum causarum est esse'. Ergo non sunt idem realiter essentia et esse" (*In I Sent.*, d. 8, q. 21 [ed. Buytaert, II, 886, no. 12]). What we seem to be confronting here is what Gilson notes: "The metaphysical complex resulting from the combination of Avicenna's notion of efficient causality as origin of existences, with the Proclean universe described in the *Book on Causes*, will become very common about the end of the thirteenth century" (*History of Christian Philosophy in the Middle Ages* [N.Y.: Random House, 1955], p. 211). To this must be added Gilson's further comment: "Il était assurément plus difficile, au début du xiv^e siècle, de distinguer entre la position d'Avicenne et celle de saint Thomas sur la composi-

tion d'essence et d'acte d'être, que ce ne l'est aujourd'hui pour nous . . ." (*Jean Duns Scot* [Paris: Vrin, 1952], p. 487, n. 1).

²⁰*De Causis et Processu Universitatis*, I, 1, 8 (ed. A. Borgnet, [Paris: 1890-99], X, 377). As Capreolus quotes this text it reads differently and seems to make better philosophical sense than both the Borgnet and the Jammy readings: "Omne quod ex alio est, aliud habet esse, et hoc quod est. Quod enim animal sit animal, vel homo sit homo, pro certo, non habet ex alio; hoc enim aequaliter est, homine existente, et homine non existente secundum actum. Quod autem esse habeat in effectu, ex se non est sibi, sed potius ex primo esse, ex quo fluit omne esse quod est in effectu. Hoc igitur quod est ab alio, habet esse et illud quod est; et sic esse hoc modo accidit ei, quia ab alio sibi est. Et ideo in ipso quaeri potest, an est, an non est; et est quaestio determinabilis per causam ejus quod est esse. In primo autem principio, propter hoc quod esse non habet ab alio, esse per se est; et quaestio, an est, nullum locum habet. Et si quaeratur, hoc erit secundum solam distinctionem rationis, et determinari non potest; hoc enim quod ipsum est et esse suum unum est . . . Cum ergo dico, homo est homo, propter hoc verum est, quia ibi dicitur illud quod est de eo quod est; et sic est id quod est non per aliquid aliud quod influat super ipsum. Patet ergo quod omne quod est, id quod est habet a seipso; esse autem suum in effectu, si ex nihilo est, a seipso habere non potest. Si enim a seipso haberet, cum sit ex nihilo, in nihilo non esset in potentia ad esse; homo enim non est in potentia illud quod est; et si esse a se haberet, oporteret quod homo existens in potentia haberet esse in effectu. Sequitur ergo quod homo existens in potentia haberet esse in effectu; et sic idem esset in effectu, et

St. Albert is concerned with manifesting what it means for something to be called *primum principium*. In the section quoted by Capreolus a contrast is set up between the *primum principium* and everything else. St. Albert indicates that everything *ex alio* is composed of *esse* and *hoc quod est*. However, the *hoc quod est* is not *ex alio*. That is, that animal is animal or man is man is not *ex alio*, for man is man whether any man exists or not. On the other hand, *esse* or *esse in effectu* is *ex alio*; that is, from the first *esse*, *ex quo fluit omne esse quod est in effectu*. Thus, St. Albert says that *esse hoc modo accidit ei quia ab alio sibi est*. In the case of the *primum principium*, *hoc quod ipsum est* and *suum esse* are one. And if one were to venture that every *quod est*, in addition to having *id quod est a seipso* has *esse a seipso*—that is, that they are identified—a contradiction would follow. For since a creature is *ex nihilo*, if it has *esse a seipso* it would

non esset in effectu. Ab alio ergo habet esse; a seipso autem quod sit hoc quod est; et per consequens esse non est hoc quod est. Et hoc est quod dicit Boetius, in libro *de Hebdomadibus* (Hebdom. 4): *Quod est habere aliquid potest praeter illud quod ipsum est; esse vero nihil habet admixtum . . .*"

Let us say initially that the presence of Avicenna to this text has not gone unnoticed by historians of this question, as witnessed by A. Maurer, "*Esse and Essentia* in the *Metaphysics* of Siger of Brabant," *Mediaeval Studies*, VIII (1946), 75; J. de Finance, *Etre et agir dans la philosophie de saint Thomas* (Paris, Beauchesne), p. 93; M.-D. Roland-Gosselin, *Le "De Ente et Essentia" de S. Thomas d'Aquin* (Paris, Vrin), p. 178. If this is the case with the text of St. Albert, Avicenna's presence to the thought of Capreolus must be evaluated in the final analysis, for Avicenna was cited on behalf of Capreolus's first conclusion (see *supra*, n. 12). In addition, Avicenna, on the distinction between essence and existence, is cited approvingly in Capreolus's answer to Gerard of Carmel: "*Utrum autem distinguatur ab eo quod est et subsistit, habetur partim ab eo*

(Aristotle), 2. *Posteriorum*, ubi Supra (cap. 4, t. c. 7) allegatum est, et partim a eius discipulis, puta Avicenna, Alpharabo, Algazele, Boetio, Auctore *de Causis*, et a sanctis Doctoribus" (*Def. Theol.*, Vol. I, p. 322ab). He is cited again in Capreolus's answer to Aureolus: "Non enim est verum quod omnis essentia sit quaedam actualitas in genere existentium, quidquid sit de genere entium praedicamentarium; omnis enim essentia creata est in potentia ad actualitatem essendi, ut probat Avicenna, ex hoc quod habet actum existendi ab alio; modo nihil est in potentia ad seipsum" (*ibid.*, p. 329a). It must also be noted that Capreolus is aware of a difference between the position of Avicenna on the distinction between essence and existence and the position of St. Thomas on the same question (*ibid.*, p. 330a).

Now, since the text of St. Albert is complementary, at least for Capreolus, to the text cited from St. Thomas, it amounts to a commentary on St. Thomas's argument and helps to clarify the way in which Capreolus understands that short cryptic argument of St. Thomas.

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not be in potency to *esse*, inasmuch as man is not in potency to *illud quod est* with which the *esse* is supposedly identified. But as *ex nihilo* it must be in potency to *esse*. Thus, man existing in potency would have *esse in effectum*—a case of the same thing being in act and potency at the same time with respect to the same thing.²¹

In Capreolus's mind, then, St. Albert's text serves as a commentary

²¹At this point the Borgnet text (see *supra*, n. 20) reads differently. This reading insists that "homo enim in potentia est hoc quod est." Capreolus's text affirms that "homo enim non est in potentia illud quod est." Both text traditions, however, reach the same conclusion. I suspect that the reading of Capreolus is closest doctrinally to the thought of St. Albert in this place.

²²"Dicetur, forte, quod ista ratio non concludit, quia supponit falsum in majori, scilicet quod essentia rei insit ei per se, hoc est, sine alia causa efficiente. Hoc enim negatur; quia, sicut homo habet a causa efficiente quod existat, vel quod sit in actu, ita a causa habet quod sit homo, et non per se, hoc est sine alia causa. Unde, sicut ante mundi creationem homo non existeret, ita nec erat homo; et ista erat falsa: homo est homo" (*Def. Theol.*, Vol. I, p. 302b). The similarity of this objection to Siger of Brabant's opposition to St. Albert is striking. In discussing the question "Utrum Esse in Causatis Pertineat Ad Essentiam Causatorum" (*Siger de Brabant, Questions sur la métaphysique*, ed. C. A. Graiff, [Louvain, 1948], pp. 11-22), Siger has occasion to note an equivocation in both the position of St. Albert in his commentary on the *Liber de Causis* and in the position of Avicenna in their use of *ex* and *per* (*ibid.*, pp. 14-15). Siger is aware that for both of them to say that the essence of a being is *ex se* or *per se* means apart from an efficient cause. Such is not the case for Siger: "Dicendum quod hic est aequivocatio ex eo quod 'ex' importat circumstantiam causae, et causa multipliciter dicitur, ut habetur *Vº Metaphysicae*, et Avicenna deceptus fuit per aequivocationem de ly 'ex'. Cum enim dicitur res est ex seipsa, potest 'ex' denotare circumstantiam causae formalis vel efficientis. Tunc dico quod ista

simul stant: homo est homo per se, secundum quod ly 'per' dicit circumstantiam causae formalis; et tamen homo per aliud est homo secundum quod 'per' denotat circumstantiam causae efficientis, et sic est deceptio. Unde in libro *Posteriorum*: primo modo dicendi per se illud est tale quod est tale per suam formam: unde potest aliquod causatum esse per se formaliter, et tamen causam efficientem habet aliam."

Siger again opposes St. Albert in "Quaestio utrum haec sit vera: Homo est animal nullo homine existente?" in *Siger de Brabant et l'averroïsme latin au XIII^e siècle*, ed. P. Mandonnet (2d ed.; Louvain, 1911), Part II, pp. 65-70. Let it be noted that the reason for Siger's opposition to St. Albert on this latter question is that the possibility of no man existing in an eternal world is an absurdity (*ibid.*, Part I, p. 118), which does not seem to be the case of the objector in Capreolus. Yet the common denominator between Siger and this anonymous objector is this, that they both assert an existentialized essence subject to an efficient cause. On Siger's opposition to St. Albert, see A. Maurer, "Esse and Essentia in the Metaphysics of Siger of Brabant," *Mediaeval Studies*, VIII (1946), 68-86. (esp. 76). If the contention is made that in the text cited from the *De Causis et Processu Universitatis* St. Albert is merely the commentator on Aristotle and not committing himself personally in regard to the truth or falsity of the doctrine (II, 5, 24; [X, 619]), then the same doctrinal immunity cannot be valid for Capreolus in citing St. Albert's commentary, for there is no evidence that he is merely a commentator in the manner of St. Albert. Rather, he is a defender.

on the text of St. Thomas. Whereas St. Thomas sets off a creature's essence and its *esse* by contrasting the *per se* character of the one with the *per aliud* character of the other, St. Albert makes use of a *seipso* in regard to the essence and *ab alio* in reference to *esse*. For St. Albert, these terms point up, first, that a thing is what it is in virtue of itself and, secondly, that the fact that it is, is due to an extrinsic agent. On the surface this text purports to say much the same as St. Thomas's text. However, in St. Albert's text, unlike St. Thomas's, it is quite explicit that the *per se* or a *seipso* character of essence or *id quod est* persists and is operative apart from *esse* and apart from any efficient cause. A *seipso*, then, positively excludes any and all penetration of an efficient cause. This is the sense of *per se* that Capreolus would have his reader take from the text of St. Thomas—essence has a being of its own, altogether independently of an efficient cause.

But again Capreolus fails to corroborate directly this interpretation as being his own understanding of St. Albert's text. Rather than such a confrontation, he chooses to interpose a possible criticism of the position set down in the two prior citations.²² Though there is still no direct comment on Capreolus's part, the objection and his reply to it furnish us with an evident indication of his own interpretation of the two above-mentioned passages. Indeed, this objection affords the key to Capreolus's interpretation of these two texts and also the key to the pattern of Capreolus's subsequent response.

In the mind of the objector, the argument contained in the two citations is inconclusive. For the objector denies as false the supposition of the perseity of the essence of a thing in the sense that it belongs to a thing independently of an efficient cause. Just as man *exists* in virtue of an efficient cause, so too man is a *man* in virtue of such a cause. So much is this a fact that, prior to the creation of the world and in the absence of the creature known as man, it was false to say "Homo est homo."

This nameless adversary has confronted the use of *per se* and a *seipso* in the texts of St. Albert and St. Thomas wherein St. Albert's doctrine of an essence, radically independent of an efficient cause, is dominant. The burden of the whole rejoinder bears on the existential order of efficient cause and shows how the requirements of this existential order

assert themselves within, and have repercussions on, the essential order, the order of *per se* predication.

Again a direct retort of Capreolus is lacking. He prefers to chide his adversary for being ignorant of certain authoritative texts such as those of Aristotle commented upon by Robert Grosseteste.²³ This time, however, Capreolus affords his reader an explicit commentary of his own. The texts of Aristotle as glossed by Grosseteste indicate that every proposition in the first and second mode of predicating *per se* is necessary and perpetually true. The quiddity of a rose necessarily belongs to a rose because the proposition "*Rosa est rosa*" is the first type of essential predication. The rose cannot be otherwise than a rose. Further, Capreolus explicitly indicates that the quiddity of a rose does not belong to it *per aliquam causam agentem extrinsecam*. There is no efficient cause that a rose is a rose. This last is based on further citations of Grosseteste's commentary.²⁴

²³"Sed qui sic dicit non advertit quod dicit Aristoteles, 1. *Posteriorum*, cap. 6 (t. c. 15), secundum signationem Linconiensis . . . et cap. 7 (t. c. 21)" (*Def. Theol.*, Vol. I, p. 302b). The texts of Aristotle which are cited constitute the lemma cited by Grosseteste prior to his commentary. Thus all the texts come from Grosseteste. See Robert Grosseteste, *In Aristotelis Posteriorum Analecticorum Libros* (Venetiis, 1537), I, 6, fol. 6va et seq.

²⁴"Ex quibus patet quod omnis propositio de primo modo dicendi *per se*, et de secundo, est necessaria et perpetuae veritatis. Cum ergo quidditas rosae conveniat rosae in primo modo dicendi *per se*, sequitur quod necessario convenit ei. Quod etiam quidditas rosae non conveniat ipsi rosae *per aliquam causam agentem extrinsecam*, ita quod aliqua causa efficiens sit causa quod rosa sit rosa, ostendit Linconiensis. Unde, primo *Posteriorum*, commento 4 . . . et commento 7 . . ." (*Def. Theol.*, Vol. I, p. 303a). For Capreolus, then, *per se* has a positive and negative aspect. Positively it denotes the characteristics of necessity and perpetuity or eternity; negatively it designates the absence of any relation to an efficient cause. Capreolus's citation of Grosseteste here on behalf of his position presents a prob-

lem, for in none of his texts cited does Grosseteste say explicitly that there is no efficient cause of the essences of things. Capreolus does quote him as saying, "*Hoc ipsum quod dico, per se, causam comparticipem excludit*" (*ibid.*), which may or may not substantiate Capreolus's contention. However, when one goes to the context in Grosseteste himself, the doctrine is clear. What Capreolus has done is to cite this first sentence of Grosseteste's commentary, then suppress a section of it with the words "*et aliquibus interpositis subdit*," and pick up the same text again farther on. The suppressed section is as follows: "*Dicitur autem 'per se' esse quod per efficientem causam non est, et sic sola causa prima est per se. Dicitur secundo 'per se' quod per causam materialem non est, et sic dicuntur intelligentiae per se entes, vel per se stantes. Dicitur etiam 'per se' esse quod per subjectum non est, et sic dicitur omnis substantia et sola per se esse . . .*" (*In Aristotelis*, I, 4, fol. 4va). Now, at least, we can see what Capreolus's citation means. For it is true that *per se* in one sense does signify the exclusion of an efficient cause; but it has meaning only in regard to the first cause—"et sic sola causa prima est *per se*"—and does not apply to the creature or the essence of

Capreolus is clearly taking his cue from the previously cited text of St. Albert. There it was noted that there is no cause of "Man is man" or "Animal is animal," each of which is true whether man or animal is existing or not, for the truth of each arises, not from the prior existence of man or animal, but rather from the fact that *illud quod est* is said of *illud quod est*. Instead of meeting the force of his adversary's attack on the existential level of the efficient cause, Capreolus meets him on the essential level of *per se* predication. For the adversary in keeping with his rejection of *per se* as signifying the radical absence of an efficient cause, had stated as a corollary to his stand that the proposition "Homo est homo" is false if no man exists. In the first phase of his rebuttal, Capreolus prefers to confront this by drawing out the implications of *per se* predication. Thus he can say that such propositions are necessary and perpetually true. At this

the creature. What makes it worse is latter two. If one goes again to the text of Grosseteste, he will see that, in the large section of the text which Capreolus fails to cite, Grosseteste goes on to talk of genus, difference, and species, indicating that this is what he had in mind initially, in the first part of the reference actually cited by Capreolus. For the text continues: "Cum igitur genus vel differentia subalternata a quibus subalternaliter, et non per accidens, egreditur quidditas speciei, praedicatur de specie, est primus modus essendi vel dicendi per se alterum de altero, egreditur namque species a quidditate generis, differentiae, et est differentia causa formalis speciei, et genus est causa speciei, sicut forma materialis, vel sicut materia formalis et istum sermonem alias confirmabimus ratione et auctoritate" (*In Aristotelis*, I, 4, fol. 4va). Thus it seems certain that Grosseteste is talking in the formal order or in the order of formal causality. And this is the case with the last text of Grosseteste cited by Capreolus where he says: "... ita quod in utraque propositione subjectum est praecisa causa praedicati vel e converso." For the *esse* in question is a quidditative *esse*.

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point the first phase of his answer shifts and blends into a second phase when he says that, as for an efficient cause of the quiddity, Grosseteste shows that there is no such thing. With the initial assault on the essential level secured, Capreolus realizes he must counter the existential portion of his adversary's argument in regard to efficient causality. Such an approach constitutes a complete reversal of his opponent's position. With the latter, the essential order of *per se* predication was subject to, and dependent upon, the demands and requirements of the existential order. Thus he could say that "Homo est homo" is not true because the existential prerequisite for such a

²⁵"Sed ad ista dicetur dupliciter. Primo, quod tales propositiones, de primo vel secundo modo dicendi per se, non sunt necessariae nisi sub conditione; utpote, ista est necessaria, homo est animal, ad hunc sensum quod, si homo est, homo est animal; non autem absolute" (*Def. Theol.*, Vol. I, p. 321a).

²⁶"Nec potest dici quod intendat talia esse necessaria ex suppositione vel conditionaliter; puta, posita constantia . . . subjecti talium propositionum . . . Similiter, sequitur quod verba Augustini sunt plus falsitatis quam veritatis . . ." (*ibid.*, pp. 303b-304a). The texts of St. Augustine cited are from *De Libero Arbitrio*, II, 8 and 10 (*PL XXXII*, 1252-53, 1256-57). For background on the problem of necessary truths *posita constantia subjecti* to which Capreolus alludes, see J. Isaac, *Le "Peri Hermeneias" en Occident de Boèce à Saint Thomas. Histoire littéraire d'un traité d'Aristote* (Paris: Vrin, 1953), Appendix III, p. 175, where he notes a proposition condemned by Robert Kilwardby at Oxford in 1277: "Item quod veritas cum necessitate tantum est cum constancia subjecti."

²⁷"Et ideo dico quod homo semper est homo; et ista est immutabiliter vera: homo est animal rationale; et ejus veritas aeternaliter est in divino intellectu . . ." (*Def. Theol.*, Vol. I, p. 321a). In defense of this contention Capreolus cites two texts of St. Thomas, "1 p., q. 10, art. 3, ad 3^{um} et de Veritate, q. 1, art. 5, ad 7^{um}," both of which maintain that eternal truths can only be in an eternal intellect. (Note Capreolus, *Ad*

argumenta aliorum, Def. Theol., Vol. I, p. 330ab: "Sed conceditur quod tam essentiam quam ipsum ejus esse, Deus aeternaliter intellexit; ac per hoc, quodlibet eorum fuit in Deo aeternaliter, ut intellectum in intelligente. Ex quo provenit quod aeternaliter rosa est rosa, rosa est essentia; sed non aeternaliter fuit, nec aeternaliter exsistebat.") Again, Capreolus finds St. Albert in agreement with St. Thomas ("Cui concordat Albertus in *Post praedicamentis*, 9 cap.") in a long text from St. Albert's *Liber de Praedicamentis*, Tract. VII, cap. 9. As with the first text cited of St. Albert, here we are in the Arabic tradition on the question: "Secundum, inquit, Avicennam, et Algazalem, et Alpharabum, et veritatem, quando praedicatum concipitur in ratione subjecti, talis propositio vera est, sive re existente sive re non existente. Sive enim homo sit, et animal, sive homo non sit nec animal, semper ista est vera: homo est animal; et: animal est vivum; et: vivum est substantia; ergo homo est substantia. Sed si ulterius inferatur: substantia est ens; ergo homo est ens, dicunt non sequitur; quia ens vel entia esse accidit homini et animali, et non per se clauditur in intellectu eorum. Cum enim dicitur: homo est animal, sufficit ad veritatem propositionis, substantialis ordinatio praedicati ad subjectum, Cum autem additur: animal est ens, quia ens non est de ratione animalis vel hominis, non est ibi ordo substantialis unius ad alterum" (ed. Borgnet, I, 289-90).

proposition and its truth is lacking—an existential man. Capreolus comes the other way around; that is, he begins in the essential order of *per se* predication, and what is present there acts as prerequisites for the existential order. Hence Capreolus can say that since a rose is necessarily a rose and since this is perpetually true, then these facts demand that there is no efficient cause of the essence. In short, he is arguing from essence to existence; that is, if this is what essence is, then existence must be such and such. In spite of the brevity of Capreolus's own explicit commentary, the main outlines of his own understanding of the text tradition he alleges is quite clear.

He continues to amplify it but in much the same disconcerting manner as heretofore. For he poses a twofold objection of a still nameless adversary and proceeds to answer it with quotations from St. Augustine, St. Thomas, St. Albert, and Aristotle, interspersed with only brief commentaries of his own. The adversary confronts the texts of Grosseteste on two counts. First, to the contention that *per se* propositions of the first and second type are necessary, the reply is made that they are not absolutely necessary. Rather they are conditionally necessary—*homo est animal* is necessary in the sense that if man exists *homo est animal*.²⁵

Against the claim of conditional necessity, Capreolus charges that this destroys the necessary principles of the demonstrative sciences. That two and three are five, or seven and three are ten, would then be no more necessary and immutably true than such propositions as that the earth is and the heavens exist. Moreover, this is contrary to St. Augustine, who affirms such necessary, eternal, and incorruptible truths without qualifying them as conditionally or hypothetically necessary. Capreolus argues that, in terms of the adversary's doctrine, what St. Augustine had said is more false than true.²⁶ For this reason, Capreolus rejects the opposing position and insists that man is always man and that the proposition "*Homo est animal rationale*" is immutably true. Its truth is eternally in God's intellect.²⁷

In saying so much as this, Capreolus has transferred the whole argument of his adversary to the domain of uncreated truth. It is interesting, thus, to note that, though starting out on the created level of reality to discuss the question of the identification of existence with

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the creature, we have ended by exploring the divine intellect. The adversary has remained on the created or existential level by reason of his insistent demand that in order that man be man, man must first be. And he is on the created level when he remarks that man by himself is formally animal, yet he is not so by himself efficiently, for this intrinsic formal cause is created—that is, comes to be by an extrinsic efficient cause. Here one is not talking on the level of uncreated truths as they exist in the divine intellect; rather, the point is made on the level of created truth. But Capreolus, denying, as he does, an efficient cause of the essence, can posit essential propositions and their truth only in the divine intellect, if they are to be eternal, immutable, and necessary. He has to end in the divine intellect because he can end nowhere else, having cut himself off from any created essential order in favor of an order independent of efficient causality and impervious to any existential penetration. The necessary and the contingent are encapsulated each within its own domain. Indeed they are worlds apart.

But, in all fairness, the adversary did not say as Capreolus would

²⁸“Sic ergo patet quod prima responsio non est nisi fuga, quae ponebat quod tam contingens est ista, rosa est rosa, sicut ista, rosa existit. Et procedit hoc, quia non discernitur de ly est, prout est secundum adiacens, et prout est tertium adiacens. Primo modo enim significat actualem existentiam subjecti; non autem secundo modo, sed solum veritatem subjecti et praedicati. Quod manifeste patet: nam aliquando aliqua copula est vera, affirmativa de in esse, in qua idem praedicatur de seipso, et tamen subjectum non est in rerum natura existens, immo nec aliquid. Quod probatur; quia ista est vera, negatio est negatio, privatio est privatio, non ens est non ens; quod patet: nam plus videtur ista neganda: caecitas est ens, quam ista: caecitas est” (*Def. Theol.*, Vol. I, p. 305a).

Capreolus then notes that Aristotle concedes the first as does Averroes, and this makes his point: “Patet ergo quod de illo quod non est aliquid in rerum natura, aliquid praedicatur, scilicet ens. Ergo multo plus idem praedicatur de seipso, sive sit existens, sive non.” And then, by way of further comment on

another text of Aristotle glossed by his Commentator (*Metaphysics* VII. 17. 1041a-10. [ed. McKeon, 810.]), “quaerere quare homo est homo, nihil est quaerere,” Capreolus states: “Ex quibus patet quod, secundum eum, non est alia causa quare homo est homo nisi ista ratio communis: quia subjectum et praedicatum sunt indivisa, et subjectum est unum et idem praedicato.” For a fuller appreciation of Capreolus’s position on the predication of *ens* of what does not exist in *rerum natura* see *Def. Theol.*, Vol. I, p. 329b. Note also *ibid.*, p. 328b. Compare this last text with the text of Giles of Rome, *Quodl.*, V, 3 (Louvain, 1643), p. 273a, cited by Father Owens, *St. Thomas and the Future of Metaphysics*, p. 83, n. 39: “Dicimus enim quod natura creata, licet sit tantae actualitatis quod possit per se intelligi: non sit tamen tantae actualitatis, quod possit existere in rerum natura, nisi superaddatur ei actualitas aliqua, quae communi nomine vocatur esse.” Note Capreolus’s citation of a similar text of Giles of Rome (*Def. Theol.*, Vol. I, p. 315a).

have him say, that, granted the existence of Socrates, then the proposition "Socrates existit" is necessary in the first mode of *per se* predication. Rather, he had insisted that *per se* propositions of the first type—for example, "Man is an animal"—are necessary on the condition that a man, Socrates, should first exist. Concerned as Capreolus is with preserving essence and existence from any mutual interpenetration, he sees his opponent's position as maintaining either that the formal causality of essence extends even to existence, rendering one's existence as necessary as one's essence, or that *esse* and its radical contingency infect essence. In this way "Rosa existit" would be as necessary as "Rosa est rosa," or they would be equally contingent.

As a closing argument against the claim of conditional necessity, Capreolus insists that his opponent fails to distinguish between the twofold use of the copula *est* as a second and as a third adjacent. Used in the first manner, it signifies the actual existence of the subject. In its other usage it does not signify the actual existence of the subject but only the truth of the subject and predicate. In this latter way even what does not actually exist and is nothing at all can be said to exist and *ens* can be predicated of it. For on the authority of Aristotle and Averroes it can be said "Caecitas est ens," even though blindness is a privation and "... subjectum non est in rerum natura existens, immo nec aliquid." This makes it clear to Capreolus that something can be predicated of what does not exist *in rerum natura*; namely, *ens*. It is thus all the more clear to him that the same thing is predicated of itself whether it is existing or not; for example, "Homo est homo." And the basic reason for this is that there is no other cause why "homo est homo" except the essence of man himself. Or if one would want to say it in another way, it is reducible to this, that subject and predicate are undivided, and one and the same.²⁸

Still failing to appreciate his adversary's point, Capreolus continues his monologue. For the adversary had made his point in the existential order in the sense that, once man exists, the proposition "Man is an animal" is true. Again Capreolus answers him from the nonexistential order, the order *de tertio adjacente*. But this time we are not in the domain of the divine intellect but rather in the domain of logic and

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the realm of *entia rationis*. By showing that something can be predicated of a nonexistent subject—even *ens*—Capreolus considers his refutation of the adversary's claim of conditional necessity to be complete. He is now prepared to answer his opponent's further interpretation of the texts of Grosseteste previously cited.

²⁹"Secundo, dicitur quod cum dicit Linconiensis quod in propositionibus de per se, praedicatum est praecisa causa subjecti, vel econtra ipse loquitur de causa formali; non autem de causa efficiente. Licet enim homo seipso formaliter sit animal, non tamen seipso efficienter; immo ad hoc quod homo sit animal, requiritur causa efficiens, sicut ad hoc quod homo existit requiritur produciens" (*ibid.*, p. 303a).

³⁰"Secunda similiter responsio quae dabatur nulla est. Quod patet. Nam si Linconiensis intendat quod in talibus propositionibus per se primo, ejusmodi est ista; homo est animal rationale mortale, praedicatum sit praecisa causa formalis subjecti, non tamen sit praecisa causa quod insit subjecto, sed requiritur causa extrinseca ad hoc quod praedicatum subjecto conveniat, sequitur quod illa causa faciat aliquid postquam est, immo quod tale quid sit ejus effectus et non sit ejus effectus. Illa causa enim nihil faciente, adhuc praedicatum conveniret subjecto, quia sive subjectum sit, sive non sit, non minus est id quod est, ut, rosa est rosa. Ergo nulla causa facit quod quidditas rosae conveniat rosae . . . immo si aliqua causa faciat quod homo sit animal, illa faciet quod idea hominis includit rationem animalis; quod non potest fieri a Deo, nec a creatura. Et sic patet quod sic per se homo est animal quod per nullam causam extrinsecam efficientem homo est animal. Ad veritatem enim ejus sufficit quod praedicatum sit de ratione subjecti; hoc autem est . . . incommutabiliter verum et inefficibiliter, nisi fingamus quod ideae sint effectibiles ab aliquo efficiente" (*ibid.*, p. 305ab). See further Capreolus in *ibid.*, p. 330ab, quoted *supra*, n. 27. For Capreolus, the essence in the divine intellect is numerically the same essence which is in *rerum natura*. Thus, for one to

claim that the essence in *rerum natura* comes to be by an efficient cause, as is the case with Capreolus's anonymous adversary, is to claim further that the divine ideas—that is, the essences of creatures—are created. Cf. Capreolus: "Ad tertium (argumentum aliorum) . . . Verumtamen concedo quod illud idem, quod prius fuit in potentia, postea illud idem numero est in actu. Et sic est in proposito. Nam essentia creaturae, prius fuit in potentia ad esse; et illa eadem acquirit esse. Unde argumentum imaginatur quod quidquid est in creatura, transferatur de potentia in actum; quod est intelligibile, nisi actus transferatur de potentia in actum" (*ibid.*, p. 330b). For Capreolus's position on *ens in potentia* cf.: "Ad nonum (Aureoli) . . . Et ita potest generaliter distinguere de ente in potentia: Scilicet de ente in potentia, in genere essentiarum; vel de esse in potentia, in genere existentiarum; sive, quod idem est, de potentia in genere entis quod dicit essentiam, vel in genere entis quod dicit existentiam. Tunc dico quod ens in potentia, in genere essentiarum, destruit ens totaliter; sed ens in potentia, in genere existentiarum, non destruit ens. Rosa enim, licet non existat, adhuc est rosa; et ens in potentia, in genere existentiae, adhuc est ens et essentia quaedam. Negatur ergo quod ens in potentia, isto modo quo dictum est, totaliter destruat ens. Et ideo actus oppositus illi potentiae aliquid addit ad illa quibus convenit. Ad confirmationem dico quod lapis, conceptus ut non positus in esse, concipitur ut nihil, in genere existentiae; non tamen ut nihil, in genere essentiae" (*ibid.*, p. 329b). For background on the problem of the divine ideas conceived as creatures see Gilson, *History of Christian Philosophy*, p. 773b, n. 78.

To Capreolus's citation of Grosseteste's claim that in *per se* propositions the predicate is the adequate and proper cause of the subject or vice versa, the rejoinder is made that in such texts he is speaking of formal cause and is not concerned with positively excluding an efficient cause by his use of *per se*. Man, for the adversary, is an animal by himself as a formal cause, but he is not an animal by himself as an efficient cause. For man to be an animal, an efficient cause is required just as much as it is required for man to exist.²⁹

But, for Capreolus, to interpret Grosseteste after the fashion of the adversary—that is, that in the proposition “Homo est animal rationale mortale,” the predicate is the formal cause of the subject; but an extrinsic efficient cause is needed to explain why such a predicate belongs to a subject or such a form is present in a subject—is to force a contradiction upon Grosseteste. Given such an interpretation, Capreolus maintains that it follows that the efficient cause produces something after it is, and that something is and is not its effect. For, as Capreolus has insisted all along, even with the efficient cause inactive, the predicate still belongs to the subject for “Rosa est rosa” with no rose actually existing. Thus, Capreolus can confidently conclude that no cause is required to make the quiddity of the rose belong to the rose. Indeed, given the divine idea of man, it immediately includes animal; and thus the truth of such eternal and necessary propositions as “Homo est animal” arises. Not even God, much less any of his creatures, can cause the idea of man to include animal. To say otherwise is to maintain that the divine ideas are produced by an efficient cause.³⁰

Lest one be surprised at such a resolution to the problem of the distinction between essence and existence, wherein one who affirms that the essences of creatures come to be by an efficient cause is accused of maintaining that the divine ideas are created, it must be realized that this solution takes place because the problem has been posed in terms of an *esse essentiae* and an *esse existentiae* and the tradition behind them.

That this is so becomes clear by assessing the doctrinal traditions at work within Capreolus's lengthy defense of the first conclusion, “Nulla creatura subsistens est suum esse quo actu existit in rerum

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natura." The first thing to be noted is the absence of any explicit texts of Capreolus's master, St. Thomas, asserting that the essences of creatures do not come to be by an efficient cause. Save for the initial text cited from the *Summa contra Gentiles*, II, cap. 52—a very brief and far from explicit text characterizing essence as *per se* and *esse* as *per aliud*—Capreolus gives his reader the impression that no other such texts are available. Indeed, St. Albert, Robert Grosseteste, St. Augustine, Avicenna, and Aristotle seem to bulk larger in Capreolus's mind at this point than does St. Thomas. Thus, on the

³¹*Def. Theol.*, Vol. III, p. 2ba, where the general question is raised "Utrum creatio sit aliquid?" The fourth conclusion (*ibid.*, p. 29b) is, "Quarta conclusio est quod nullum aliud a Deo potest esse, nisi creatum a Deo." For Aureolus's fourth argument against the fourth conclusion of Capreolus see *ibid.*, p. 44a.

³²*Ibid.*, pp. 73a-75. St. Augustine is cited: "Sicut enim dicit Augustinus, 1^a Homilia super Joannem . . ." (see *PL*, XXXV, 1387). St. Thomas is then cited in agreement: "Cui concordat sanctus Thomas, *Contra Gentiles*, lib. 4, cap. 11, ubi dicit quod intellectum in intelligente, est intentio intellecta et verbum. Est igitur in Deo intelligente seipsum, Verbum Dei, quod est Deus intellectus; sicut verbum lapidis in intellectu, est lapis intellectus. Ibidem etiam dicit quod, licet haec sit falsa, Homo est verbum, tamen haec potest esse vera, Homo intellectus est verbum. Ex quo patet quod omnis essentia, antequam creetur, habet esse essentiae intelligibilis in Deo. Et ideo, antequam mundus fieret, erat in Deo lapis intellectus, et essentia rosae intellecta; et sic de caeteris. Essentia enim, vel quidditas, non est aliud quam illud quod importat ratio alicujus. Et quia ratio cujuslibet rei est aeterna in Deo; ideo quaelibet essentia aeternaliter est essentia vel quidditas. Esse enim essentiam, vel quidditatem, non est aliud quam habere rationem veram, non fictitiam, in intellectu alicujus vere intelligentis." St. Albert is cited (*ibid.*, p. 74b): "Item, Dominus Albertus, in Logica sua veteri, *Tractatu de Postpraedicamentis*,

cap. 9 . . ." a text we have already confronted in the context of essence and existence. He is cited again: "Item, idem in Commento super Porphyrium, in *Tractatu de communibus differentiis et convenientiis quinque universalium*, cap. 8 . . ." (*ibid.*, p. 75b). For another citation, note "Item in Commento super *Praedicamenta*, exponens illud Philosophi, *Destructis primis substantiis, impossibile est aliquid aliorum remanere* (tract. 2, cap. 4) . . ." (*ibid.*). In addition, St. Thomas is cited from *Quodlibet* 8, 1, 1, a text Capreolus has quoted in the context of essence and existence.

³³"Apparet igitur, prima facie, quod, licet nulla essentia creata fuerit ens ab aeterno, loquendo de ente prout dicit actum essendi vel actualem existentiam, tamen quaelibet essentia semper fuit id quod nunc est essentialiter et per se: puta quod homo semper est homo, semper est animal, semper est corpus, semper est substantia, semper est essentia, vel ens quod dicit essentiam. Et hoc secundum mentem Alberti, et multorum aliorum; cujus etiam opinionis videtur esse sanctus Doctor" (*ibid.*, p. 76a).

This doctrine of *ens prout dicit actum essendi vel actualem existentiam* and *ens quod dicit essentiam* is a commonplace in Capreolus in the context of this discussion of creation and especially in the context of essence and existence. And in each case it is clearly derived from a doctrinal complex found in St. Albert and the Arabic tradition of Avicenna, Algazel, and Alfarabi propounding the doctrine of an uncreated essence. Note *ibid.*, p. 71a.

score of the uncreated essence, Capreolus finds himself unable to fulfill his initial program and cite his master's own words on behalf of this point in proof of his first conclusion. So it is that, from this complex doctrinal tradition, the doctrine of an *esse essentiae*, in which essence as essence has being proper to itself, comes to assert itself within the Thomistic tradition and guide the exegesis of the texts of the master himself.

Capreolus himself leaves no doubt on this point when, in answering an argument of Aureolus against his fourth conclusion on the question of creation,³¹ he cites the same doctrinal complex of St. Augustine and St. Albert, and the Arabian tradition of Avicenna, Algazel, and Alfarabi alluded to by St. Albert, which we have just confronted here.³² Furthermore, Capreolus notes his own appraisal of this tradition:

It is therefore clear, at first sight, that, though no created essence was a being from eternity, when we use the term "being" in the sense of "act of being" or "actual existence," nevertheless any essence always was that which it is now essentially and of itself—for example, that man always is man, always is animal, always is body, always is substance, always is essence, or being in the sense of essence. This is said according to the mind of Albert and many others. The holy Doctor also seems to be of this opinion.³³

The certainty with which Capreolus ascribes this doctrine to St. Albert and many others contrasts rather starkly with his hesitancy in attributing this position to St. Thomas. A similar hesitancy is called for even in our day, and all the more so in light of the way in which Capreolus resolves his hesitancy and uncertainty:

If, however, this position is not satisfactory, let a person hold what St. Thomas holds, *On the Power of God*, question 3, article 5, where he argues this way: "All things which are made by God are said to be the creatures of God. But creation terminates at *esse*, for 'the first of all created things is *esse*,' as it is said in the book *On the Causes*. Since, therefore, the quiddity of the thing is other than its *esse*, it seems that the quiddity of the thing is not from God." This is the argument. There follows his answer (ad 2^{um}). "From this very fact," he

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says, "that *esse* is given to the quiddity, not only the *esse* but the quiddity itself is said to be created, because, before it has *esse*, it is nothing, except perhaps in the intellect of the Creator, where it is not a creature, but the creative essence." These are the words of St. Thomas. And I think that this second way is more

³⁴"Si tamen illa positio non placet, teneatur quod tenet sanctus Thomas, *de Potentia Dei*, q. 3, art. 5, ubi sic arquit: 'Omnia quae a Deo sunt facta, dicuntur esse Dei creaturae. Creatio autem terminatur ad esse; prima enim rerum creaturarum est esse, ut habetur in libro *de Causis*. Cum igitur quidditas rei sit praeter esse ipsius, videtur quod quidditas rei non sit a Deo.' Ecce argumentum. Sequitur responsio (ad 2^{um}): 'Ex hoc ipso, inquit, quod quidditati esse tribuitur, non solum esse, sed ipsa quidditas creari dicitur; quia, antequam esse habeat, nihil est, nisi forte in intellectu creantis, ubi non est creatura, sed creatrix essentia.'—Haec sanctus Thomas.—Et puto quod ista secunda via est securior. Nec tamen alia via est erronea, nec errori proxima nisi pro quanto videtur ponere quod essentia habeat aliquod esse, et non a Deo. Sed hoc non debet movere. Quia, sicut dicit Henricus, et bene, meo iudicio, essentia habet duplex esse, scilicet esse essentiae, et esse existentiae; et quodlibet istorum habet a Deo; sed primum habet a Deo ut est causa exemplaris, dans per suum intelligere esse intelligibile et quidditativum cuilibet essentiae; secundum autem esse dat, ut est causa efficiens; et sic non sequitur quod creatura habeat aliquod esse quod non sit a Deo, sed solum quod non dicitur creari quantum ad primum, sed quantum ad secundum esse. Item, quia, ut supra tactum est, esse possibile, esse intelligibile, esse quidditativum, cum non sit esse nisi secundum quid, non est per creationem; sed sufficit quod sit per intellectionem divinam, in genere causae formalis."

See also *ibid.*, p. 72b, *ad tertium principale*. Note also in the context of essence and existence: "Verumtamen dico quod, sumendo ens nominaliter, prout dicit essentiam decem praedicatorum . . . Quia ens sumptum participatiter, quod convertitur cum hoc

quod dico existens . . ." (*ibid.*, Vol. I, p. 384b, 326a, 327a, 327b, 328a, 328b, 329ab.) Corresponding to the two kinds of being are the two kinds of *nihil*: "Non plus enim ridiculum est distinguere de nihilo, quam de non ente. Sed constat quod Philosophus, 5 *Physicorum*, particula 8; et 4 *Metaphysicae*, particula 2, distinguit de multiplici non ente. Quare non est inconveniens distinguere de nihilo, prout negat existentiam" (*ibid.*).

³⁵*Ibid.* See Henry of Ghent, *Quodlibeta* (Paris: Jacobus Badius Ascensius, 1518) I, q. 9, fol. 6v-7r. Capreolus has cited Henry of Ghent elsewhere in the same place: ". . . dicitur quod dicentes lapidem, qui prius erat purum nihil, etc., intelligunt quod lapis erat omnino nihil in genere existentium; nec erat ibi aliquid ultra tale nihil, existens in actu, et de quo posset dici, hoc est actu. Erat ultra nihileitatem, quae est carentia actualis existentiae, essentia in esse essentiae; quae, absolute considerata, ut natura vel quidditas, est subtrahibilis nihileitatis existentiae et aliquidditatis existentiae, hoc est, ipsi esse vel non esse actualis existentiae. Et ipsa, secundum se, semper est aliquid in genere essentiarum, et in esse intelligibili, et in potentia activa Creatoris, licet non in esse reali actuali, ut declarant Henricus, et Godofridus, et Bernardus de Gannato" (*Def. Theol.*, Vol. III, p. 73a). On the basis of Capreolus's liaison with Henry of Ghent, one may well ask, how, in holding the real distinction as he does, he can avoid concluding to the intentional distinction of Henry. The Godfrey noted seems to be Godfrey of Fontaine and the text which Capreolus may have in mind might be the one quoted by M. Grabmann, "Doctrina S. Thomae de Distinctione Reali inter Essentiam et Esse ex Documentis Ineditis Saeculi XIII Illustratur," *Acta Hebdomadae Thomis-*

secure. However, the first way is not erroneous or even close to error, except insofar as it seems to hold that the essence has some *esse* and not from God. But this difficulty should not move us. For, as Henry says—and says well, in my judgment—the essence has a two-fold *esse*—namely, the *esse* of essence and the *esse* of existence—and it has both of these from God. The first it has from God inasmuch as He is the exemplar cause, giving by His act of understanding the intelligible and quidditative *esse* to any essence. The second *esse* He gives inasmuch as He is the efficient cause. Thus, it does not follow that the creature has some *esse* which is not from God but only that it is not said to be created as regards the first but only as regards the second *esse*. Again, because, as was mentioned above, possible *esse*, intelligible *esse*, quidditative *esse*, since it is only an *esse secundum quid*, is not by creation; but it is sufficient that it be by the divine intellection, in the genus of formal cause.³⁴

The tradition of St. Albert, Avicenna, and others is thus crowned by the name and doctrine of Henry of Ghent—which is as it should be, both historically and philosophically, because his doctrinal position on being is cut from the same cloth. And even though Capreolus retires to the dubious security (“Et puto quod ista secunda via est securior”) of St. Thomas’s own words, the doctrinal inspiration presiding over the interpretation of his master’s words remains the alien metaphysical position of Avicenna, St. Albert, and Henry of Ghent. And though this latter tradition may have become the “Thomistic tradition” on the question (and I am certain that it has³⁵), it is a Thomistic tradition which does not derive from St. Thomas Aquinas.³⁶

ticae (Roma, 1924), p. 150. Bernardus de Gannato is also known as Bernard of Clermont or Bernard of Auvergne. See P. Wyser, o.p., *Der Thomismus*, Vols. 15-16 et *Bibliographische Einführungen in das Studium der Philosophie*, ed. I. M. Bochenski, (Berne: Franke, 1948-51) Vol. XIV, No. 32.20. The text of Bernard edited by E. Hocedez in *Quaestio de Unico Esse in Christo a Doctoribus Saeculi XIII Disputata, Textus et Documenta, Series Theologica*

(Rome: 1933), pp. 101-14, contains a discussion of the question in terms of *esse essentiae* and *esse existentiae*.

³⁵The doctrine of an uncreated essence among the *Thomistae* after Capreolus may be found in Paulus Barbus Soncinas, *Quaestiones Metaphysicales* (Venetiis, 1498), Bk. 4, q. 12, fol. B³ra-B³va. *Tertio principaliter arguitur* . . .; Cajetan, *Commentaria in De Ente et Essentia D. Thomae Aquinatis*, ed. Laurent, cap. V, p. 157;

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Throughout this intricate argumentation we have seen Capreolus philosophize (or, perhaps better, theologize) almost by proxy. For he makes it clear to his reader that he has reached his conclusions on the distinction between essence and existence in and through certain authoritative texts of other theologians and philosophers. St. Thomas Aquinas, avowedly, is Capreolus's chief proxy; but in the text we have examined he has been textually superseded by St. Albert, Robert Grosseteste, St. Augustine, Avicenna, and now Henry of Ghent. St. Thomas, however, is not superseded doctrinally, for all of these citations are offered as positions on essence and existence which to Capreolus "videntur de mente S. Thomae fuisse." And the over-all burden of such texts holds for an uncreated essence on the part of the creature as contrasted with a created existence. Whereas the existence of creatures is due to God as efficient cause, their essence does not come to be by an efficient cause. For Capreolus, consequently, essence is distinguished from existence as that which *is not* produced by a creative efficient cause is distinguished from that which *is* produced by a creative efficient cause. It is a distinction between the necessary and the contingent, neither of which can be identified with the other. It seems to be clear that this is what Capreolus thinks is "de mente S. Thomae." I think, though, it is a position that is not true to the doctrine of St. Thomas himself.

Sylvester of Ferrara, In *Summa contra Gentiles*, ed. Leonine, (Rome, 1930), Tome XIII, 389a, V; Chrysostomus Javellus, *Tractatus de Transcendentibus*, Cap. IV, 466b-467a, in his *Totius Philosophiae Compendium*, (Lugduni, 1568), Vol. I. It is precisely this widespread doctrine of the *Thomistae* which makes it mortally vulnerable to the Suarezian critique: "In the present revival of interest in the metaphysical doctrine of St. Thomas, the case of Suarez is perhaps the best object lesson in what happens when the Thomistic essence is represented as any kind of essential *being*, or even conceived as having some kind of proper being in its own right, whether such being is looked upon as real or as only intentional." See Joseph

Owens, C.S.S.R., "The Number of Terms in the Suarezian Discussion on Essence and Being", *THE MODERN SCHOOLMAN*, XXXIV (1937), 191.

Thus should anyone allude to "the Thomistic tradition" on the possibles he may be historically accurate. But this in no way indicates that St. Thomas is a party to such a position. See Owens, "The Number of Terms," p. 190, n. 101: "There is of course nothing to prevent the word 'Thomist' from being used in a number of different senses as far as doctrine is concerned. For Suarez, according to the usage of his times, it meant the school of thought represented by Capreolus, Cajetan and so on. 'Thomistic' is still used today in that sense . . ."

PLATONISM IN POSITIVISM

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An ancient Greek epigram says pithily, "Wherever I wander in my mind, I meet Plato coming back." In our own times Whitehead is reported to have described all philosophy as a series of footnotes to Plato. If this is an exaggerated opinion for philosophy in general, the epistemology of logic and mathematics in logical positivism may perhaps be taken as lending some support to it.

In a recent article on logical positivism¹ Mr. Slattery singles out the status of propositions in mathematics and logic as being the testing ground for the truth of the logical positivist theory of knowledge—at least in its most widely known formulation by Professor Ayer.² This was a fair choice on Mr. Slattery's part, since Professor Ayer himself admits that these types of propositions present a difficulty to a positivist and that a failure to solve that difficulty would force him to give up his whole empiricist position.³ Furthermore, although Professor Ayer has found it advisable in his later works to modify some of the views put forward in *Language, Truth and Logic*, he has never changed his position on the status of propositions of logic and mathematics.⁴ Thus for Professor Ayer the propositions of logic and mathematics are still necessary, lacking in factual content, and somehow applicable to the physical world.

Mr. Slattery concerned himself with the difficulties in Professor Ayer's theory of arriving from the empirical at the necessary. He asked the pointed question, Why was it allowable to derive the neces-

sary propositions of mathematics and logic from the empirical contingent world, in view of the strict injunction against doing so for the necessary propositions of metaphysics?⁵ The following inquiry deals with the problems and implications of the firmly held tenets in Professor Ayer's philosophy: namely, the nondescriptive character of logico-mathematical statements; their seemingly arbitrary character; and their applicability to, and usefulness in the description of, the physical world.

We must remind ourselves that Professor Ayer, as a self-avowed empiricist, cannot admit any other heuristic avenue but that of experience. It is perhaps not surprising to hear him aver that logic and mathematics are learned the same way as chemistry and history have to be learned.⁶ Yet, he says of these propositions that "none of them provide any information about any matter of fact. In other words, they are entirely devoid of any factual content . . ." ⁷ The most important question that should now be asked is: How is it possible to arrive at such nondescriptive propositions, which give us no information about any matter of fact, about any empirical situation, while starting out from the empirical world of sense experience?

This can only happen by a mistake in the description of the procedure or because Professor Ayer has taken leave of his own empirical sources of knowledge. Leaving aside the former alternative, we see that the latter seems to shatter the whole basis of the logical positivist epistemology. If we learn arithmetic through the medium of sense

¹M. P. Slattery, "Thomism and Positivism," *Thomist*, XX (Oct., 1957), 447-69.

²A. J. Ayer, *Language, Truth and Logic* (2d ed.; Gollancz, 1951).

³*Ibid.* pp. 72-73. Professor Ayer asserts as much again in *Revolution in Philosophy* (Macmillan, 1956), pp. 70-77.

⁴Professor Ayer says: "If empirical statements had the formal validity which makes the truths of logic unassailable they could not do the work that we expect of them; they would not be descriptive of anything that happens. In demanding for empirical statements the safeguard of logical necessity, these philosophers have failed to see that they would thereby rob them of their factual

content" (*The Problem of Knowledge* [Pelican, 1956], p. 41).

⁵"Thomism and Positivism," pp. 457-59.

⁶*Language, Truth and Logic*, p. 74.

⁷*Ibid.*, p. 79.

⁸*Contemporary Philosophy* (London; Burns & Oates, 1956), p. 34.

⁹*Language, Truth and Logic*, p. 73.

¹⁰Professor Ayer says about a-priori propositions: "And the reason why we are entitled to feel no doubt about their truth may be that we can prove them; or even that we can see them to be valid; in either case there is an appeal to intuition since we have at some point to be able to claim to see the validity of a proof" (*Problem of Knowledge*, p. 43).

¹¹*Language, Truth and Logic*, p. 74.

¹²*Ibid.*, p. 75.

experience, then arithmetic must have some factual content, however general. Otherwise, why should *any* knowledge derived from sense experience be factual? If, on the other hand, arithmetic has no factual content, then it is not derived from experience; it is not learned in the same way that chemistry and history are learned. Where then does it come from? Innate ideas? A Platonic heaven? What would be the process of acquiring such knowledge? And if such a process is admitted, is one who admits it still an empiricist?

According to Copleston,

the fact that the logical positivists accept the view that the propositions of formal logic and pure mathematics are analytic and certain means that one has to make a reservation if one wishes to speak of logical positivism as "sheer empiricism". . . . However, if one leaves on one side their view of formal logic and pure mathematics, one can say that logical positivists maintain a "radical empiricism".⁸

The "if" of Father Copleston's last sentence gives the whole game away. It clearly shows the pitfall of double epistemology that Professor Ayer falls into. Somewhere on the road to learning arithmetic, mathematics, and logic, we take leave of sense experience and have recourse to a not very well explained "intuition." Professor Ayer's attempts to avoid rationalism⁹ drive him into some mysterious form of intuitionism.¹⁰ He admits as much when, with reference to propositions of logic and mathematics, he stresses the distinction between saying that all knowledge begins with experience and saying that all knowledge comes out of experience,¹¹ and when he says that he is "obliged to be somewhat dogmatic" about this matter of learning necessary propositions, that he "can do no more than state the issue clearly" and trust that we can "see" the falsity of Mill's position and the truth of his own. He expects us to "see" or to "apprehend" the necessity of mathematical propositions from experience;¹² yet he gives us no satisfactory or convincing account of the nature of that process. And yet this is *the crucial point in the whole of empiricist thought*. The charge that Professor Ayer has abandoned empiricism seems amply justified; if he has not, if it is true, as he

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says, that a discovery of a logical or mathematical truth is due to an inductive procedure,¹³ we fail to see how such propositions can lack *some* factual content. We see that Professor Ayer makes these assertions: (a) knowledge of logic and mathematics is independent of experience—a statement which he eventually claims means that they do not owe their validity to it—(b) discovery of logico-mathematical truths is a result of inductive procedure. We submit that *a* amounts to departure from empiricism, *b* is irreconcilable with factual emptiness, and that *a* and *b* are contradictory. But whether consistently or not, Professor Ayer constantly maintains that such propositions do not describe physical reality.

At this point one is irresistibly reminded of the Platonic doctrine of the line. On the one hand we have a set of empirical propositions contingently describing the physical world—the probable statements and hypotheses of logical positivism, closely allied to Platonic *doxa*. On the other hand we have a set of necessary immutable truths which are not about the contingent physical world and which are known, furthermore, by some special process of “seeing” or “apprehension” rather reminiscent of Platonic *dianoia* or *episteme*.

This Platonic dualism in Professor Ayer’s doctrine raises the fundamental question of how mathematics and logic can apply to the physical word. For he says of these propositions that “none of them provide any information about any matter of fact. In other words they are entirely devoid of factual content . . . consequently they say nothing . . .”¹⁴ Elucidating further his view of these propositions he says:

Thus if I say, “Nothing can be coloured in different ways at the same time with respect to the same part of itself”, I am not saying anything about the properties of any actual thing; but

¹³*Ibid.*, p. 74.

¹⁴*Ibid.*, p. 79

¹⁵*Ibid.* (Italics mine.)

¹⁶We read for example that “many branches in pure and applied sciences are frustrated in their development because present day mathematical thinking does not give accurate solutions to some key problems. Proper application of mathematical methods guarantees a complete formulation of a complex

physical phenomenon and a consistent analysis of its implications” (J. Turkevitch, “Soviet Science in the Post-Stalin Era,” *American Academy of Political and Social Science Annals*, CCCIII [Jan., 1956], 141).

¹⁷One cannot help recollecting Wittgenstein’s way of talking about language games when discussing philosophical problems.

¹⁸*Language, Truth and Logic*, p. 13.

I am not talking nonsense. I am expressing an analytic proposition *which records our determination* to call a colour expanse which differs in quality from a neighbouring colour expanse a different part of a given thing. In other words I am simply calling attention to the implications of certain linguistic usage.¹⁵

Is he trying to tell us that if he had determined otherwise he could have had something which was colored in different ways with respect to the same part of itself? Are not these statements difficult to reconcile with the well-known fact that the developments in the physical sciences are so much dependent upon developments in the field of mathematics? If mathematical propositions *really* say nothing, why are they so crucially important?¹⁶

We should pay close attention to the preceding quotation, for it introduces a new element into our discussion; namely, the characteristic of arbitrariness attaching to the analytic propositions. If they record our *determinations*, what distinguishes them from, say, the rules of chess or some other game?¹⁷ The fact that the propositions and rules of logic are necessary while those of chess are not? Whence, then, the necessity of logico-mathematical statements? Professor Ayer provides an answer: "If they are necessary, it is only because the relevant linguistic rules are presupposed."¹⁸ But to base the necessity of logic and mathematics upon relevant linguistic rules which turn out to be arbitrary is unintelligible. The difference in the nature of our determinations concerning rules of chess and analytic statements such as Professor Ayer describes is nowhere satisfactorily explained. What is more, if this voluntarism were taken literally, we should question the need, however inconsistent it was shown to be already, for his saying that the discovery of logical and mathematical truths is a result of an inductive procedure. There would be *no* discoveries. Logical truths would be our *fiats*.

It is instructive to look at what the logicians and mathematicians themselves say about what they do and how they do it when they construct a system. Quite a different impression concerning the supposed lack of descriptiveness and arbitrariness of logic and mathematics can be obtained from their writings. This impression becomes

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strengthened if we also take a look at the historical setting in which mathematics developed, if we realize that a lot of it developed in response to the pressing needs of practical affairs and physical sciences.¹⁹ Even if this observation is not a proof against Professor Ayer's position, it may perhaps raise some doubts about it. And if we pay attention to the formal properties of mathematico-logical systems, again we shall be impressed by the apparently stronger link existing between the system and the physical world than Professor Ayer's position seems to allow.

Let us elaborate on some of the above points a little. Professor Ayer's statements remind us of the famous *dictum* of Russell that mathematics is a subject in which we never know what we are talking about or whether what we are saying is true.²⁰ To express the same idea with less pungency but in a more technical language, Russell is pushing the syntactical approach to mathematics to extremes, abstracting from, and neglecting as unimportant, the other dimensions of semiotic, especially that at which interpretation appears. Commenting upon Russell's remark Tarski suggests we should take it critically. If we behave as if we did not understand the meaning of the terms of the discipline, this is not the same thing as denying that they have meaning. In fact a formal system for which there would be no single interpretation would be of interest to nobody.²¹ An objection could be raised that Professor Ayer never denied meaningfulness to logic and mathematics. He did not. What we are trying to do is to show that the idea of interpretation which lies at the root of our construction seriously weakens Professor Ayer's assertions of nondescriptiveness and arbitrariness.

¹⁹T. Dantzig, *Number, the Language of Science* (Anchor, Doubleday); L. O. Kattsoff, *A Philosophy of Mathematics* (Iowa State College Press, 1948); M. Kline, *Mathematics in Western Culture* (New York: Oxford Univ. Press, 1952); R. L. Wilder, *Introduction to the Foundations of Mathematics* (J. Wiley & Sons, 1952), chap. 12.

²⁰*Mysticism and Logic* (New York: W. W. Norton & Co., 1929), p. 75.

²¹A. Tarski, *Introduction to Logic and Methodology of Deductive Sciences* (2d ed.; Oxford, 1946), p. 129.

²²*Foundations of Mathematics*, p. 20.

²³B. Sobocinski, "In Memoriam Jan Lukasiewicz," *Philosophical Studies* (Maynooth), Dec., 1956, p. 31.

²⁴E. R. Stabler, *An Introduction to Mathematical Thought* (Addison-Wesley, 1953), p. 141.

²⁵N. A. Court, *Mathematics in Fun and in Earnest* (New York: Dial Press, 1958), pp. 31-32.

²⁶Quoted in Court, *ibid.*, p. 33. One could also mention that Lesniewski, a first class logician, maintained at one time that logic, like the other sciences, deals with physical objects, only that it describes them more generally.

Wilder puts it even more strongly and more explicitly than Tarski did. Discussing axiomatic method in modern mathematics, he describes an axiom as a statement which seems to hold true for an underlying concept, and an axiom system as a collection of such statements about the concepts. Although he considers the theoretical possibility of constructing axioms out of undefined terms to which no meaning was attached—that is, without an introduction of some concept to be talked about—he claims that even if one did find something to say, which is unlikely, one was very likely to contradict oneself soon. As he says: “The underlying concept is not only the source of the axioms, but it also guides us to consistency . . .”²²

Sobocinski, a logician, avers that reality is such that a certain system of logic imposes itself upon us.²³

The history of the attempts to devise a criterion for one of the most important properties of logico-mathematical systems also undermines our confidence in the correctness of Professor Ayer’s views. We are referring to the problem of consistency; that is, of devising a way of providing that a formula of the form “P.-P” is not deducible in our system. There is no absolute logical proof of consistency, and the only general method available is through a model or interpretation. As often as not, the model used is a physical one.²⁴ This situation led Court to say:

This method of procedure is very significant. It expressed the fundamental belief that logical consistency is identical with natural consistency. It makes the consistency of nature to be one of the foundations, one of the cornerstones of the mathematical edifice.²⁵

Hilbert himself, the formalist *par excellence*, apparently went even further, saying: “Indeed geometry is just that part of physics which describes the relations of positions of solids to one another in the world of real things.”²⁶ Coming from Hilbert it is a most significant statement and quite at odds with Professor Ayer’s views.

It should be stressed that the preceding paragraphs amount to much more than arguments from authority. We quoted some first-class practitioners of logic and mathematics; the problems discussed are

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those lying at the very core of both disciplines. It is hard to imagine that the discussion of how such problems arise and how they are met would be irrelevant to our understanding of the status of logico-mathematical statements. Unfortunately Professor Ayer chose not to concern himself with such problems to any great extent. This prevented him from seeing the relation of logic and mathematics to reality in such a way that the possibility and fact of the applicability of both becomes intelligible and inevitable; on his premises it is neither really. A Thomist would maintain that both logic and mathematics reflect the world, arise out of our experience of it, and that because of that fact the applicability of both to the world is not surprising. Such also seems to be the views of the writers we quoted. However strange it may appear, it looks as if the mathematicians and logicians we referred to were more empirically minded than Professor Ayer himself.

Since we have already drawn attention to the Platonic overtones of the positivist epistemology, it might be instructive to consider how far the real Platonist is faced with the same problem. The fact is that

²⁷Cf. "Why Are the Calculuses of Logic and Mathematics Applicable to Reality?" Proceedings of the Aristotelian Society, Symposium S., Vol. XX, 1946. See also A. Pap, *Elements of Analytic Philosophy* (Macmillan, 1949), chap. 6.

²⁸Gilson says: "If there were such a science as a phenomenology of metaphysics, Platonism would no doubt appear as the normal philosophy of mathematicians and of physico-mathematicians. Living as they do in the world of abstract, intelligible relations, they naturally consider number as an adequate expression of reality. In this sense, modern science is a continually self-revising version of the *Timaeus*, and this is why, when they philosophize, modern scientists usually fall into some sort of loose Platonism. Plato's world precisely is the very world they live in, at least *qua* scientists" (*Being and Some Philosophers* [2d ed.; Toronto, 1952], p. 41).

And W. V. O. Quine makes a similarly revealing remark: "Let us see how, or to what degree, natural

science may be rendered independent of platonistic mathematics: but let us also pursue mathematics and delve into its platonistic foundations" (*From a Logical Point of View* [Harvard, 1953], p. 19).

²⁹A. Koestler, *The Sleepwalkers* (Hutchinson, 1959), p. 40. Cf. also A. H. Armstrong: "'Things are numbers' is a fundamental Pythagorean doctrine, interpreted in many different ways at different times by different members of the school, but always meaning that the essential reality of things can be in some way completely expressed in numerical terms; from this primitive doctrine a long and complicated line of development leads to modern mathematical physics" (*An Introduction to Ancient Philosophy* [Methuen, 1957], pp. 7-8).

³⁰A. N. Whitehead, *Science and the Modern World* (Cambridge Univ. Press, 1943), pp. 47-48. See also n. 26.

³¹Cf. A. Koestler: "One may note in passing that some of our logical positivists transferred into the seventeenth century would have dismissed the question what a planet 'weighs' with

he is not faced with it; or, at least, the conflict is reduced to far lesser proportions. This is because of the Platonic metaphysical system. In the Platonic doctrine of participation, the physical world is an imperfect copy of the real intelligible world of *mathematical Ideas*. So a bridge is formed between the contingent physical world and the necessary world of mathematical reality. The application, then, of mathematical formulae to the physical world is the direct result of Platonic metaphysics. The physical world has reality and therefore intelligibility only insofar as it somehow embodies or copies mathematical laws. So the dependence of our knowledge of the physical world on our knowledge of mathematics is no mystery at all for the Platonist. It is the most evident thing possible to him.

Not so, however, with Professor Ayer. He has made a hard and fast division between the necessary world of mathematics and the contingent world of sense experience; and he can give no reason why we should even suspect for a moment that the physical world is amenable in any way at all to mathematical modes of investigation. His supreme reality, the world of sense data, if it gives rise to a knowledge of logic and mathematics, does so in a manner so highly mysterious that it should be totally unacceptable to any true empiricist. It is only fair to say that the positivists themselves are not unaware of such difficulties and that they have made numerous attempts to explain how propositions of logic and mathematics apply to the physical world. Although it is not the task of this paper to examine the proposed solutions,²⁷ one cannot help feeling that as long as we follow the lines indicated by Professor Ayer, they are not likely to be satisfactory.

As opposed to the empiricist, the Platonist can consider the whole rise and development of mathematical physics as an illustration and a confirmation of his metaphysics; as, in fact, the *Timaeus* brought up to date.²⁸ This Pythagorean conviction that numbers are the key to the understanding of the world seems to be specific to the Western civilization.²⁹ If it had not permeated the thinking of the Western scientist,³⁰ if the West had enjoyed solely a logical-positivist type of philosophy, one feels that anyone suggesting it would have been shouted down with cries of "nonsense."³¹ Propositions which say nothing are after

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all not generally thought of as offering the key to the discovery of truth, least of all truth about the physical world. Thus we see that if we are to seek the philosophical background for the development of mathematical physics, we have to go into a very different philosophical tradition from that represented by Professor Ayer and his school.

The fact is that Professor Ayer's position with respect to logic and mathematics is radically unstable. It suffers from internal difficulties. It seems to be based upon inadequate consideration of the history of the subject and of the most important problems therein. It suffers from the disadvantages of Platonic dualism, without offering any of its attractions, substituting for them half-hearted empiricism. Mr. Slattery seems to be quite justified when he says that the only logical course Professor Ayer can adhere to if he wishes to keep to his special brand of empiricism is to adopt the position of J. S. Mill.³² Mill took the heroic course of saying that mathematics consisted of *contingent* propositions with high probability value; being in principle falsifiable, they were also descriptive. But if Professor Ayer prefers not to follow Mill and to keep to his own strict dualism of the analytic and empirical, then he must give up his crude empiricism and adopt either Platonism or Kantianism,³³ both of which entail giving up his "nonsense" theory of metaphysical statements. Actually, since he rejects the synthetic a-priori proposition, he is left only with

an airy wave of the hand; and if their attitude had prevailed, the scientific revolution would not have taken place" (*The Sleepwalkers*, p. 499). E. A. Burt says: "In the light of these considerations it is safe to say that even had there been no religious scruples whatever against Copernican astronomy, sensible men all over Europe, especially the most empirically minded, would have pronounced it a wild appeal to accept the premature fruits of an uncontrolled imagination, in preference to the solid inductions, built up gradually through the ages, of man's confirmed sense experience. In the strong stress on empiricism, so characteristic of present day philosophy, it is well to remind ourselves of this fact. Contemporary empiricists, had they lived in the sixteenth century, would have been the first to scoff out of court the new philos-

ophy of the universe" (*The Metaphysical Foundations of Modern Physical Science* [New York: Humanities Press, 1951], p. 25).

³²"Thomism and Positivism," pp. 457-59.

³³Discussing the propositions of logic and mathematics Professor Ayer says: "Their truths are certain because we do not admit the possibility of their being falsified . . . there is a strong echo of Kant in this position . . . and indeed the analogies between Kant and Wittgenstein are surprisingly close" (*Revolution in Philosophy*, pp. 76-77). And it is not necessary to elaborate upon the relation of Wittgenstein to logical positivism and to Professor Ayer, at least insofar as the propositions of logic and mathematics are concerned.

³⁴"Thomism and Positivism," pp. 459-61.

Platonism—which is after all a philosophy that no one need feel ashamed of.

But of course, Platonic dualism has its difficulties; and Professor Ayer might still wish to retain his empiricist leanings. In that case, as Mr. Slattery pointed out,³⁴ he has only to inspect the Aristotelian theory of induction; that is, of knowledge through “abstraction,” as it is called, from sense experience. On this basis, Professor Ayer can have his necessary propositions deriving from the world of sense experience. Of course, there is a price to pay—he will still have to reinstate metaphysics. For in the Aristotelian theory of induction, necessary propositions so derived are certainly descriptive and include propositions of a metaphysical character as well as those of logic and mathematics.

THE PHILOSOPHY DEPARTMENT OF FORDHAM UNIVERSITY has announced the publication of a new philosophical journal, *International Philosophical Quarterly*. The first issue will appear in January, 1961. Its co-editorship by the Jesuit philosophy faculty of Berchmans Philosophicum, Heverl  e-Louvain, Belgium, and the collaboration of philosophers in America, Europe and Asia, will assure a truly international outlook and roster of contributors. The objective of the review is to provide an international forum in English for a contemporary expression of the great tradition of theistic, spiritualist and personalist philosophy. There will be no further restriction of schools within these broad lines. The review hopes to reach a wide audience in the Orient, which at present is imperfectly acquainted with the spiritual tradition of Western philosophy. A second special objective will be to encourage greater mutual understanding between Anglo-American and continental European philosophers, who since the war have tended to work in growing isolation from each other, to their mutual detriment. Hence three articles in each issue will be reserved to European contributors. Subscriptions will be \$6.50 a year for four issues (640 pages). All mail should be addressed to: *International Philosophical Quarterly*, Fordham University, New York 58, New York.

THE METAPHYSICAL SOCIETY OF AMERICA, which was founded in 1950 at New Haven by Paul Weiss, Professor of Philosophy at Yale, is now an international society. It has become a member of the F  d  ration Internationale des Soci  t  s de Philosophie and of the American Council of Learned Societies. Transcending special issues and the limited tendencies of many philosophers, this association pursues with vigor and thoroughness the questions which underlie all others and which have perplexed mankind from the beginning of its career of reflective thinking and intelligent action. Its 1961 meeting will be held at Clark University, Worcester, Massachusetts, on March 18. Its president for 1960-61 is Henry Veatch, of Indiana University.

THE THIRTY-FOURTH SESSION OF THE INDIAN PHILOSOPHICAL CONGRESS was held at Cuttack, Orissa, under the auspices of the Utkal University, December 28-31, 1959. The Indian Philosophical Congress was founded by Dr. S. Radhakrishnan. Its first meeting was held in 1925, in Calcutta, and Dr. Rabindranath Tagore was its first president. The Indian Philosophical

(Continued on p. 60.)

ATOMIC PHYSICS AND REALITY

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The development of physics in the twentieth century centers around two great achievements, the theory of relativity and quantum theory. It is generally agreed that the latter is the most revolutionary and far-reaching theory in the history of physics since the days of Newton. Here, however, general agreement ends, for the proper interpretation to be given to quantum theory and its relation to reality has been a subject of continuing debate for over thirty years. The most widely accepted view, the so-called "orthodox interpretation" championed by Bohr and Heisenberg¹ represents a peculiar mixture of physics and philosophy. Their contention is: No one can consistently accept the facts of atomic physics and reject their interpretation of them; no one can logically accept their interpretation and reject its philosophical implications. Nevertheless, the philosophical implications have been found unacceptable by many philosophers of different schools.²

Before accepting or rejecting any part of this physics-philosophy one must know which aspects of it are clearly established, which are doubtful, and which are gratuitous assumptions. This we intend to indicate in the present paper by outlining the historical development of the theory and the reasons which have been adduced for and against it. The theory itself, the so-called "Copenhagen interpretation," need not be considered in complete detail since it has been adequately treated elsewhere.³ The related philosophical problems will be considered in a subsequent article. In both articles we shall attempt to separate the philosophical problems from their physical basis to the degree

that the matter permits, since we believe that such a separation is a prerequisite for clarification of this involved problem.

EARLY DEVELOPMENT

Quantum theory has developed through a series of jumps, experimental and theoretical breakthroughs, which established new plateaus. Each jump was followed by a detailed examination of the new plateau and eventually, when it proved incomplete, a preparation for a new jump. The critical breakthrough which precipitated the conflicts on the nature of fundamental reality came with the simultaneous development of quantum mechanics and wave mechanics, which occurred, roughly, between 1924 and 1927. However, this

¹Bohr first explained his views at a physics conference at Como, Italy, in September of 1927. This talk is reprinted in his *Atomic Theory and the Description of Nature: Four Essays with an Introductory Survey* (Cambridge: Univ. Press, 1934). One of Heisenberg's earliest explanations is contained in *The Physical Principles of the Quantum Theory* (Chicago: Univ. of Chicago Press, 1930). The latest and most complete exposition of each of these authors' views may be found in Niels Bohr, "Discussion with Einstein on Epistemological Problems in Atomic Physics," *Albert Einstein: Philosopher-Scientist* (Evanston, Ill.: Library of Living Philosophers, 1949), pp. 199-241; Werner Heisenberg, "The Development of the Interpretation of the Quantum Theory," *Niels Bohr and the Development of Physics*, ed. W. Pauli (New York: McGraw-Hill Book Co., 1955), pp. 12-30; Werner Heisenberg, *Physics and Philosophy: The Revolution in Modern Science* ("World Perspectives," Vol. XIX; New York: Harper & Bros., 1958). Chapter viii of this last book is a slightly less technical version of the preceding account by Heisenberg.

²Eva Cassirer, "Methodology and Quantum Physics," *British Journal for the Philosophy of Science*, VIII (1958),

334-41, summed up the reaction of the participants in the Second International Conference of the Philosophy of Science (held in Zurich, 1954): "Complementarity was almost generally rejected as being unhelpful." A summary of many of the philosophical objections to this theory may be found in Mario Bunge, "Strife About Complementarity," *British Journal for the Philosophy of Science*, VI (1955), 1-12; 141-54.

³For concise, not overtechnical explanations of this doctrine see Norwood Russell Hanson, "Copenhagen Interpretation of Quantum Theory," *American Journal of Physics*, XXVII (1959), 1-15; Enrico Cantore, "Philosophy in Atomic Physics: Complementarity," *THE MODERN SCHOOLMAN*, XXXIV (1957); Philipp Frank, *Philosophy of Science: The Link between Science and Philosophy* (Englewood Cliffs, N.J.: Prentice-Hall, 1957) chaps. ix and x. A more technical treatment is given by Hans Reichenbach, *Philosophical Foundations of Quantum Mechanics* (Berkeley: Univ. of California Press, 1944), Pt. 1. A summary of this problem and his solution is contained in his posthumous work, *The Direction of Time*, ed. Maria Reichenbach (Berkeley: Univ. of California Press, 1956), sec. 25.

conflict can only be understood in the light of the development which preceded it.⁴

The earliest stages in the development of quantum theory—Planck's explanation of black body radiation (1900) and Einstein's explanation of the photoelectric effect (1905)—introduced an apparent contradiction into the description of light. Maxwell and others had successfully unified and explained all the known data on the basis of a wave theory of light. Planck's theory, as interpreted by Einstein, pictured light as a stream of photons and on this corpuscular basis explained new and otherwise intractable data. The further development of quantum theory by Debye, Bohr, and Sommerfeld did nothing to resolve this conflict.

Louis deBroglie's answer to this dilemma was a radical one.⁵ Rather than resolve the duality, he extended it to mass particles (electrons and protons) by postulating that every fundamental "particle" was composed of a corpuscle plus an associated wave. Through this theory he was able to give an explanation of the apparently arbitrary principle (quantization of orbits) which had been used heuristically by Bohr to explain the structure and some of the properties of the atom. Schrödinger (1926) proved that the requisite conditions for the wave particle duality postulated by deBroglie could not be satisfied within the atom. He eliminated the corpuscular aspect and assumed that all the known and knowable particles were of a wave nature. On this assumption he developed wave mechanics, which proved an unprecedented success in solving the problems that perplexed his contemporaries.

Heisenberg, Born, and Jordan simultaneously and independently of

⁴A. d'Abro, *The Rise of the New Physics* (2 vols.; New York: Dover Pubns., 1951), Vol. II, gives a detailed semitechnical history of this development. A brief, popular, yet authoritative history of atomic theory may be found in Werner Heisenberg, *Nuclear Physics*, trans. F. Gaynor and A. von Zepplin (London: Methuen, 1953). A historical account which stresses the

problem of interpretation may be found in Max Born, *Physics in My Generation: A Selection of Papers* (London: Pergamon Press, 1956).

⁵Louis deBroglie explains the development of his own theory in *The Revolution in Physics: A Non-mathematical Survey of Quanta*, trans. Ralph W. Niemeyer (New York: Noonday Press, 1953).

Schrödinger developed quantum (or matrix) mechanics on a completely different basis.⁶ Emulating and extending the precedent set by Bohr, Heisenberg totally rejected all physical models of atomic reality, such as waves and particles, and developed a mathematical formalism which used only observable quantities, such as frequencies and polarizations. His cumbersome mathematical methods did not facilitate the solution of practical problems as did the more flexible wave mechanics. Yet the two theories did not seem to lead to any contradictory conclusions.

In the summer of 1926 Bohr, as the elder statesman of atomic physics, invited both Schrödinger and Heisenberg to Copenhagen to discuss the new developments. Much to Schrödinger's displeasure, Bohr proved that the simple wave picture could not even explain the original work of Planck. Heisenberg's collaboration with Bohr proved more satisfactory. As Heisenberg later recalled:

During the months following these discussions and intensive study of all questions concerning the interpretation of quantum theory in Copenhagen finally led to a complete and, as many physicists believe, satisfactory clarification of the situation. But it was not a solution which one could easily accept. I remember discussions with Bohr which went through many hours till very late at night and ended almost in despair; and when at the end of the discussion I went alone for a walk in the neighboring park I repeated to myself again and again the question: Can nature possibly be as absurd as it seemed to us in these atomic experiments?⁷

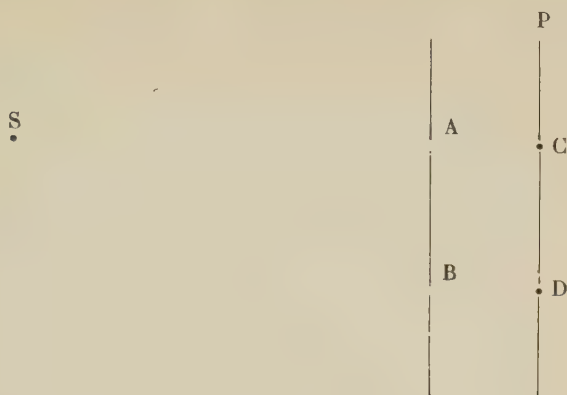
What were these experiments which seemed to demonstrate that nature was neurotic? A detailed explanation of some of them has

⁶Heisenberg gives an interesting non-technical account of the genesis of his own ideas in *The Physicist's Conception of Nature*, trans. Arnold J. Pomerans (London: Hutchinson, 1958), pp. 51-71.

⁷Heisenberg, *Physics and Philosophy*, p. 42.

⁸Niels Bohr in *Albert Einstein*, pp. 210-30.

been given by Bohr.⁸ Here we will give a sketchy explanation of the simplest of them.



A source, S , ideally an infinite distance away, projects electrons through the slits A and B and on to the photographic plate, P , where they are recorded by the spot produced. We consider first the results when slit B is closed. The spots have a symmetrical distribution about a point of maximum intensity, C , which is on a line with A and S . Are these electrons behaving as waves or particles? The laws proper to waves indicate that a wave passing through A would spread and could not produce a sharp point interaction. The occurrence of such sharp interactions could be seen most clearly if the beam were weakened until one electron came through at a time and produced a single spot on the plate. If slit A is closed and B opened, a similar intensity pattern is found centered about the point D . Accordingly, only a particle interpretation seems tenable.

Now both slits are opened. We would expect a distribution of spots which would be the sum of the two preceding ones. This is not observed. Instead the photographic plate would reveal a series of bright and dark lines, an interference pattern similar to the beats produced by sound waves. If one attempts to explain this observation on a particle basis he must assume that the behavior of a particle passing through slit B depends on whether or not slit A is opened, an assumption which clearly seems to be unreasonable.

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The difficulty illustrated by this experiment has been explained rather precisely by Reichenbach.⁹ Calling "phenomena" the atomic facts which may be inferred rather directly—here the emission of electrons and their subsequent absorption at the plate—and "interphenomena" any explanation of the behavior of the particles between the coincidences which constitute the phenomena, he summarizes the two conclusions drawn from the experimental data. (1) One of the two proposed interphenomena (particles and waves) can explain *any* possible experiment. (2) Neither of the two interphenomena can be used to explain *all* possible experiments without introducing causal anomalies.

To the nonphysicist, this dilemma may seem to be of trivial significance. To the atomic physicist it is quite serious. The ultimate goal, the ideal towards which atomic physics had been striving, was an explanation of fundamental particles in terms of basic principles and of composite bodies in terms of the properties and activities of the particles which constitute these bodies. Accordingly, these fundamental particles, which are still but dimly understood, were thought to represent reality at its most basic level. As deBroglie expressed it:

Nevertheless, it seems to me that one thing can be asserted: despite the importance and the extent of the progress accomplished by physics in the last centuries, as long as the physicists were unaware of the existence of quanta, they were unable to comprehend anything of the profound nature of physical phenomena for, without quanta there would be neither light nor matter and, if one may paraphrase the Gospels, it can be said that without them "was not anything made that was made."¹⁰

Hence the magnitude of the crisis. As long as quantum theory remained a thing of rags and patches nature was not understood. A unified view was needed before the new plateau could be properly explored.

The Copenhagen interpretation of quantum theory born of the collaboration of Bohr and Heisenberg developed along two different but related lines. Bohr tried to work the new pictures obtained by wave mechanics into the interpretation of the theory in an acceptable

⁹Reichenbach, *Philosophical Foundations*, pp. 1-42.

¹⁰DeBroglie, *Revolution in Physics*, p. 14.

way. This was not an attempt to build a constructural model of an atom. Rather, it was motivated by his realization that, however far the phenomena to be explained may transcend the scope of classical physical explanation, the account of all evidence must be expressed in classical terms. The successful development of quantum theory on the basis of evidence obtained from classical instruments indicated that the notions proper to classical physics must have some validity when applied to the phenomena measured by these instruments.

Bohr's analysis of actual and possible experiments led to two conclusions which concern us here. The first is the *indivisibility of atomic phenomena*. This conclusion is based on the realization that the atomic system to be studied is interacting on an atomic level with the experimental apparatus and thus destroying the clear-cut distinction between the process of observation and the thing observed—or, in Bohr's terms, between the subject and the object. The whole experiment must be considered as an epistemologically irreducible unit. The significance of this "indivisibility" principle may be seen by considering the double slit experiment previously described. The question, "Which of the two slits does the electron pass through?" is an attempt to subdivide the phenomena observed. To ask such a question in a physically meaningful way one must change the experimental set-up; for example, by closing one slit. However, the question is considered meaningless when asked of the experiment performed with both slits open. In this way the previous difficulty is solved by simply legislating it out of existence with, according to Bohr, nature itself presiding as the legislator.

The second principle, *complementarity*, is closely related to the first. The dilemmas discussed at Copenhagen revealed an essential ambiguity in any attempt to apply conventional physical attributes to atomic objects. For example, to apply the concept of momentum one must use an experimental arrangement which measures momentum exchange. This momentum exchange prohibits precise localization of the interaction which supplies the experimenter with his information. In a similar way one can measure position only by destroying the possibility of measuring momentum. Accordingly, the two concepts, momentum and position, are to be considered as complementary

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concepts. Though both are needed, no possible experiment can give a precise determination of both simultaneously.

The spontaneous objection to this doctrine is that it confuses the possibilities of measurement with the properties of the things to be measured. Though the precise measurement of a particle's momentum may destroy the possibility of measuring its location, one instinctively feels that before the experiment was performed the particle did have a location. It must have been somewhere. This difficulty is, in a peculiarly inverted way, the cornerstone of Bohr's theory. All knowledge of atomic behavior is rooted in experimental data. This data allows no possibility of using the concept "location" in a meaningful way without becoming involved in causal anomalies; for example, the way a particle goes through slit *A* depends on whether or not slit *B* is open. In terms of Bohr's principles this discussion of location—albeit an unmeasurable location—is a conceptual attempt to divide an indivisible phenomenon. The apparent contradiction involved in speaking of a particle without location is due to the use of the term "particle" beyond the limits set by the principle of complementarity. Under the circumstances, it would be preferable to use the term complementary to "particle"; that is, "wave." For wave phenomena—for example, a sound—localization has, at best, a rather vague meaning.

Heisenberg's contribution to the Copenhagen interpretation was of a more abstract nature. Bohr met the paradox of apparently contradictory experimental results by imposing severe restriction on the language in which these experiments could be described.

¹¹The "experimental" derivation of the indeterminacy principle given by Heisenberg in *Physical Principles* has often led to the simplified explanation that the indeterminacy results from the fact that the experiment disturbs reality. Bohr has objected to this oversimplification on the grounds that it introduces a distinction between the observation and the reality observed.

¹²Born's theory is summarized in his Nobel Prize lecture, "Statistical Interpretation of Quantum Mechanics," reprinted in *Physics in My Generation*, pp. 177-88.

¹³Schrödinger still holds a modified form of his original wave theory. His present views are explained in "Are There Quantum Jumps?" *British Journal for the Philosophy of Science*, III (1953), 109-34, 233-42, and in *Scientific American*, CLXXXIX (Sept. 1953), 52. The "orthodox" answer to Schrödinger's objections is given in Born's article, "The Interpretation of Quantum Mechanics," *Physics in My Generation*, pp. 140-50.

¹⁴P. A. M. Dirac, *The Principles of Quantum Mechanics* (3rd ed.; Oxford: Oxford Univ. Press, 1957).

Heisenberg faced the problem of how to pass from an experimentally given situation to its mathematical representation. He solved this problem by reversing it. In conjunction with Pauli he developed a mathematical formalism (the representation of states by vectors in Hilbert space) and introduced the hypothesis that only those states which could fit into the formalism could occur in nature. This assumption led directly to the now famous "indeterminacy principle."¹¹ This principle focused Bohr's doctrine of complementarity into a sharp mathematical form which specified the maximum accuracy obtainable in the simultaneous measurement of position and momentum or other similarly related complementary concepts. Again, the paradoxes are legislated out of existence, but now by mathematical rather than linguistic laws.

The mathematical synthesis which Heisenberg strived for was furthered by other developments. Chief among these was the re-interpretation of Schrödinger's wave mechanics. Born (1926) showed how these waves could be interpreted as determining a probability distribution.¹² At the same time, Schrödinger and Eckart independently demonstrated that the mathematical formulation of wave mechanics is equivalent to the more involved matrix methods. Finally, Heisenberg and Kennard sounded the death knell of the original wave picture proposed by Schrödinger by proving that wave packets diffused in time and could not be considered to behave like small particles.¹³ These separate elements were gathered together and harmonized in the monumental work of Dirac.¹⁴

The result of these labors is a complete consistent system which is capable, at least in principle, of answering all questions within its domain. By this statement we certainly do not mean that all questions concerning fundamental particles, for example, have been answered or are likely to be answered in the immediate future. What it does mean is that any proposed answer must, according to the Copenhagen school, be consistent with the formalism of quantum theory and be interpreted in the light of its principles. Accordingly, subsequent generations of physicists could content themselves with learning quantum mechanics and the rules for applying it, while almost completely ignoring the "philosophical" problems of interpretation. This, it

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seems, is what the overwhelming majority have done. As Einstein noted in this connection ". . . only those who have successfully wrestled with the problematic situations of their own age can have a deep insight into those situations."¹⁵ Accordingly, the philosophy of the Copenhagen interpretation and of quantum theory in general will be extracted from the writings of those who wrestled with this problematic situation.

PHILOSOPHICAL PROBLEMS

That the "Copenhagen Interpretation" is intended to be a philosophy as well as a physics seems clear from the statements of its authors. As Heisenberg summarized it:

What was born in Copenhagen in 1927 was not only an unambiguous prescription for the interpretation of experiments but also a language in which one spoke about Nature on the atomic scale, and in so far a part of philosophy. . . . This was not, however, the language of one of the traditional philosophies, positivism, materialism, or idealism; it was different in content, although it included elements from all these systems of thought.¹⁶

This philosophy differs from traditional philosophies in its mode of expression and development as well as in its content. It is almost inextricably intertwined with the physics from which it springs and thus presents, for the philosopher of more traditional views, an elusiveness which is most frustrating. This interconnection is not unintentional. Behind it lies the contention that no one can logically accept the present quantum theory and deny the philosophical implications which flow from it.¹⁷ The enormous success of quantum theory points to the conclusion that this sublimated physics is a

¹⁵Albert Einstein, "Reply to Criticisms," *Albert Einstein*, p. 665.

¹⁶Heisenberg, *Niels Bohr*, p. 16.

¹⁷This claim is most clearly seen in Heisenberg's refutation of those who claim to accept the physics of his theory but reject the philosophy (*ibid.*, pp. 17-23).

¹⁸Dirac, *Principles of Quantum Mechanics*, p. 5.

¹⁹Niels Bohr, "Can Quantum Mechanical Description of Physical Reality Be Considered Complete?," *The Physical Review*, XLVIII (1935), 696.

²⁰Bunge, *British Journal for the Philosophy of Science*, I, 3, n. 1, gives a bibliography of the various articles in which Bohr defends this opinion.

scientifically proven philosophy. Under these circumstances any commentator who attempts to separate the philosophy from its physical basis runs the risk of distorting the mind of the authors of the theory. Nevertheless the risk must be taken.

Perhaps a general, though certainly oversimplified, statement of this philosophy could be that the "quantum philosophy" consists in translating the restrictions imposed upon physical theory into epistemological and metaphysical statements. The epistemological problem is the decisive one, since their metaphysics ultimately consists in a denial of the possibility of metaphysics. In a grossly oversimplified form the epistemological argument might run as follows. All knowledge comes through the senses—and the men under consideration (Bohr, Heisenberg, Pauli, Dirac, and to a lesser degree, Born) will admit of no knowledge essentially distinct from sense knowledge. The greatest refinement of sense knowledge is had in the experimental data of modern physics. This data manifests an intrinsic limit in the amount and type of knowledge which can be obtained. Hence it is literally meaningless to speak, in any way, of anything beyond these limits. This view has been succinctly expressed by Dirac: "Only questions about the results of experiments have a real significance and it is only such questions that theoretical physics has to consider."¹⁸ A similar summary was given by Bohr:

The extent to which an unambiguous meaning can be attached to such an expression as "physical reality" cannot of course be deduced from *a priori* philosophical conceptions but . . . must be founded on a direct appeal to experiments and measurements.¹⁹

This epistemology, a logical extension of sensism, plays a determining role in the "metaphysics" of complementarity. Only phenomena can be known; nothing more can be said to exist. Bohr has repeatedly explained that we cannot attribute autonomous physical reality (that is, a reality independent of the experimenter) to objects on the atomic scale.²⁰ Recently, Heisenberg has expounded this doctrine in a more philosophical tone. He distinguishes three types of realism—practical realism, dogmatic realism, and metaphysical

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realism—by the following criterion.²¹ One “objectivates” a statement if he claims that its content does not depend upon the conditions under which it can be verified. Practical realism assumes that there are statements that can be objectivated and that, in fact, the largest part of daily experience consists in such statements. Dogmatic realism, the working philosophy of prequantum physics, claims that there are no statements concerning the material world that cannot be objectivated. Finally, metaphysical realism goes one step further by saying that “the things really exist.” Dogmatic realism falls with the quantum paradoxes. Metaphysical realism is equated with Descartes’s doctrine on the *res extensa* and then simply dismissed by an appeal to Locke, Berkeley, and Hume.

Elsewhere, this doctrine of realism and objectivity is applied to atomic problems.²² For an atomic system to be objective it must be completely isolated from the rest of the world. Any connection would introduce submicroscopic disturbances which, to an unknown degree, destroy the objectivity of the property in question. A measurement supplies just such a disturbing connection. Hence, a completely objective system can never be known. Is it real? The answer to this question must be sought in the sources of knowledge from which the term “real” gets its meaning. The real is that which can be known by the senses and, by extension, verifiable concepts which may be derived from sense knowledge. Such concepts can be verified of an atomic system only by destroying its objectivity; that is, by performing a measurement. Then the system becomes real but is no longer objective. In summary, an atomic system may be either objective (and “potential”) or real, but not objectively real. Only macroscopic systems, which are not appreciably changed by observation, may be considered objectively real.

The metaphysical realist may be inclined to dismiss this doctrine as simply absurd. Yet two claims may be made in its behalf. First, the experimental data, the quantum theory that explains it, and the epistemology and metaphysics sketched above form a consistent system. Secondly, the quantum theory, in which this philosophy is embedded, has proved extremely successful. Any future theories must

²¹Heisenberg, *Physics and Philosophy*, p. 81.

²²Heisenberg, *Niels Bohr*, pp. 25-28.

²³The discussion between Bohr and

Einstein at this conference is summarized by Bohr in *Albert Einstein*, pp. 211-24.

contain the present theory, at least as a limiting form. For these reasons this "quantum philosophy" seems destined to endure. It must be taken seriously.

What criticisms should be brought against this theory? Rather than attempt an independent answer to the question we shall consider the chief criticisms which have been offered through the years and the responses which the defenders of the Copenhagen interpretation have proffered.

CONFLICT OVER COMPLEMENTARITY

The objections to this theory, like the theory itself, represent a mixture of philosophy and physics put forth by men who, for the most part, are professional physicists and amateur philosophers. Here, however, the relation between the two is even more confused. Many of the objections, implicitly based on what Heisenberg would call "metaphysical realism," were elaborated by men who explicitly denied the possibility of metaphysics. In their criticisms, the language of physics hovers over the problem of the real existence of the objects of physics. We shall present the objections, chiefly those of Einstein, and then try to extract the philosophical residue.

The trial by fire for the new theory came with the Solvay physics conference held in Brussels in October, 1927.²³ The older generation of physicists who had inaugurated the quantum theory (Planck, Einstein, vonLaue, Lorentz) strongly objected to the new proposed interpretation on the ground that it violated the very nature of a physical theory. Implicit in the methodology of classical physics, including the theory of relativity, were two requirements which any theory must satisfy. First among these is causality in the physicists's sense; that is, a subsequent state is determined by a preceding state. Second among the requirements traditionally imposed, especially on mechanical theories, is that such a theory must explain all phenomena as relations between objects existing in space and time. By discussing various possible experiments, Einstein, as the leader of the opposition, showed that the new theories, wave mechanics and quantum mechanics, could not satisfy these standards.

Bohr's reply, which was more fully developed later, was that since

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these standards could not be met, the standards themselves must change to meet the new theory. Causality and space-time localization should be considered complementary and mutually exclusive aspects of atomic phenomena. There are exact laws of a causal form (the time-dependent Schrödinger equation) and there are space-time observations. But it is not possible to establish a one-to-one correspondence between the two. The relation is merely statistical. Implicit in this defense is a radically new idea of the very nature of scientific explanation. Science does not explain things or even give laws for the activities and properties of things. Rather, it serves to correlate the various observations which can be made. This distinction was of little significance as long as it could be held, at least in principle, that observation did not disturb the system being observed. In atomic physics the observed system and the observation fused into an indivisible unit, a phenomenon, and the distinction became crucial. Two years later Bohr explained this theory of physics a little more clearly:

We meet here in a new light the old truth that in our description of nature the purpose is not to disclose the real essence of the phenomena but only to track down, so far as it is possible, relations between the manifold aspects of our experience.²⁴

At the same conference the wave-particle theory made a last, rather desperate, stand.²⁵ DeBroglie had developed a "pilot-wave" theory which, he hoped, might unify the wave and particle aspects of quantum phenomena in a conceptual model capable of explaining the observed data. Pauli proved that this new theory violated the firmly established principles of special relativity. For this reason, and also because of mathematical difficulties in the theory, deBroglie abandoned the attempt to form unified models and capitulated to the Copenhagen school.

Einstein's criticism took on a sharper edge in the 1930 Solvay confer-

²⁴Niels Bohr, *Atomic Theory*, p. 18.

²⁵See deBroglie, *Revolution in Physics*, chap. x, sec. 6.

²⁶This is summarized by Bohr in *Albert Einstein*, pp. 224-30. A dramatic nontechnical account of this debate is given by George Gamow, "The Prin-

ciple of Uncertainty," *Scientific American*, CXCVIII (Jan. 1958), 51-57.

²⁷It is of interest to note that Einstein obtained both of his relativistic formulas discussed here by similar thought experiments.

ence.²⁶ He argued that when the exigencies of the special theory of relativity were properly considered, the indeterminacy principle and the doctrine of complementarity do not constitute an absolute limit in the knowability of atomic phenomena. He proposed an ideal thought experiment, a light-tight box containing radiation and a clock which controlled a shutter capable of releasing a single photon. Through the clock mechanism the *time* at which the energy of the system changed could be precisely determined. By an ideally precise weighing of the box before and after the experiment, coupled with the famous relativity formula, $E=mc^2$, the *energy* change could also be precisely determined.²⁷ Yet the Copenhagen interpretation insisted that time and energy were complementary variables governed by an indeterminacy relation. They could not be precisely determined simultaneously.

After a hectic sleepless night Bohr returned to the conference with a detailed answer. By invoking the "principle of equivalence," the fundamental principle of Einstein's own general theory of relativity, he showed that an energy change in the system would change the rate at which the clock measured time. The resulting indeterminacy in time, coupled with the indeterminacy that, as he proved, must be found in the weighing, yielded the relation exactly as the indeterminacy principle required.

Since this time the claim of the Copenhagen school that their interpretation was able to present a consistent theory which could, at least in principle, explain all the then known data has not been seriously challenged to my knowledge. As Einstein himself later summarized the situation:

It must be admitted that the new theoretical conception owes its origin not to any flight of fancy but to the compelling force of the facts of experience. All attempts to represent the particle and wave features displayed in the phenomena of light and matter, by direct course to a space-time model, have so far ended in failure. And Heisenberg has convincingly shown, from an empirical point of view, any decision as to a rigorously deterministic structure of nature is definitely ruled out because of the atomistic structure of our experimental apparatus. Thus it is

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probably out of the question that any future knowledge can compel physics again to relinquish our present statistical theoretical foundation in favor of a deterministic one which would deal directly with physical reality.²⁸

This admission of Einstein does not mean, however, that the Einstein-Bohr conflict ceased. It merely changed form, coming slightly closer to philosophy. The Copenhagen school insisted that the limitations in the "knowability" of phenomena were determined by the very nature of the phenomena. Accordingly, the ψ -function, together with its statistical interpretation, offered an absolute limit to atomic knowledge. In this sense it could be considered exhaustive. This conclusion, proper to the formalism of a physical theory, was sublimated into the philosophical proposition that there was no atomic reality beyond that represented in the ψ -function. Einstein, together with Podolsky and Rosen, felt that the ψ -function was incomplete.²⁹ Certain aspects of physical reality, they insisted, must be considered real and yet could not be included in the present theory. As might be expected, they offered a criterion of physical reality based on a correlation with physical theory:

If, without in any way disturbing a system, we can predict with certainty (i.e., with probability equal to unity) the value of a physical quantity, then there exists an element of physical reality corresponding to this physical quantity.

By applying this criterion of reality to yet another ideal experiment, the authors tried to demonstrate that both position and momentum

²⁸Albert Einstein, *Out of My Later Years* (New York: Philosophical Lib., 1950), p. 109.

²⁹A. Einstein, B. Podolsky, and N. Rosen, "Can Quantum-Mechanical Description of Reality Be Considered Complete?" *Physical Review*, XLVII (1935), 777-80.

³⁰Niels Bohr, "Can Quantum-Mechanical Description of Reality Be Considered Complete?" *Physical Review*, LXVIII (1935), 606-702. A more theoretical explanation of the EPR experiment in terms of ensemble theory has been given by Armand Siegel and

Norbert Wiener, "Theory of Measurement in Differential-Space Quantum Theory," *Physical Review*, CI (1956), 429-32. The alternative explanation proposed by W. Furry (*Physical Review*, [1936], 393, 476) that there is no correlation between the separated systems seems to have been disproved experimentally. See D. Bohm and Y. Aharonov, "Discussion of Experimental Proof for the Paradox of Einstein, Rosen, and Podolsky," *Physical Review*, CVIII (1957), 1070-76.

³¹Einstein, "Autobiographical Notes," *Albert Einstein*, p. 89.

could be simultaneously *real*, though they were not simultaneously measureable. They considered two separate systems, I and II, which interacted for a time and then separated. By arguments which need not be recounted, they showed that it should be possible to measure the position of I and then, by means of the product wave function $\psi_{I,II}$ determine the position of II, *without in any way disturbing II*. By their criterion of reality, the position of II is real. Similarly, the momentum of II could be determined by measuring the momentum of I, again without disturbing II. Hence, they concluded, both position and momentum are simultaneously real in spite of the fact that they are not simultaneously measurable.

Bohr's reply³⁰ translated the general requirements of the EPR experiment into a system which, in principle, was amenable to precise measurement. An examination of the possible measurements which could be performed on the system revealed that any measurement of the position of I would destroy all possibility of determining the momentum of II and vice versa. He concluded that their criterion of reality was essentially ambiguous when applied to atomic systems. They spoke of measuring I without in any way influencing II, whereas the very conditions that made a measurement of I possible necessarily exerted an influence on II. In spite of the separation of the two systems, the experiment as a whole must be considered one indivisible phenomenon.

A study of both papers leaves one with a rather frustrated feeling. Either paper, considered by itself, seems correct. When viewed together they do not quite meet, in spite of the apparent clear clash. Both are trying to establish the relationship between physical theory and the things observed; that is, physical reality. Yet each would define both terms of the relationship differently. Bohr, as we have seen, considers physical theory to be essentially a means of correlating observations, while "physical reality" is practically equivalent to the resulting correlation. Einstein's conception of the nature of physical theory is, by his own admission, derived from his own work in general relativity and field theory.³¹ By this standard any theory which is not a representation of things in space and time must be

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considered incomplete, though it may represent the maximum utilization of available information.

His ideas on "physical reality" are of more interest to us.³² Though he finds it impossible to give a critical justification of his stand—without exhuming the dead bones of metaphysics—he holds for a distinction between an "objective" and a "subjective" factor in knowledge, even on the atomic level. If one can admit such an objective element—that is, a *Ding an sich* which is really out there—the philosophy of Bohr and Heisenberg, a repudiation of such objective reality, must be incorrect.

Plausible as this stand may have seemed on intuitive grounds, Einstein found himself in extreme difficulty every time he tried to present a critical defense of it. Each of his many attempts to construct verifiable statements about the "objective" element in atomic reality had met with frustration. Any attempt to construct metaphysical statements about atomic reality was precluded by his epistemology, the doctrine that concepts and propositions get meaning only through connection with sense experience.³³ There remained only the hope, poignantly expressed, that future physicists would be able to verify his intuition of reality:

Some physicists, among them myself, can not believe that we must abandon, actually and forever, the idea of direct representation of physical reality in space and time; or that we must accept the view that events in nature are analogous to a game of chance. It is open to every man to choose the direction of his striving; and also every man may draw comfort from Lessing's fine saying, that the search for truth is more precious than its possession.³⁴

³²Einstein, "Reply to Criticisms," *ibid.*, p. 673.

³³*Ibid.*, p. 13.

³⁴Einstein, *Out of My Later Years*, p. 110.

³⁵Heisenberg, *Niels Bohr*, gives a brief outline and refutation of each of the theories that disagrees with his own. A synthesis of the work done on the "causal interpretation" of quantum theory together with a complete (as of 1957) bibliography may be found in H. Freistadt, "The Causal Formulation of Quantum Mechanics of Particles (The

Theory of deBroglie, Bohm, and Takabayasi)," *Nuovo Cimento Suppl.* (Ser. 10), V (1957), 1-70.

³⁶David Bohm, "A Suggested Interpretation of the Quantum Theory in Terms of 'Hidden Variables,'" I, *Physical Review*, LXXXV (1952), 166-79; II, *ibid.*, 180-93; "Reply to a Criticism of a Causal Re-interpretation of the Quantum Theory," *ibid.*, LXXXVII (1952), 389-390; "Proof that Probability Density Approaches $|\psi|^2$ in Causal Interpretation of the Quantum Theory," *ibid.*, LXXXIX (1953), 458-66.

What conclusions may be drawn from this long, involved controversy?³ One hesitates to arbitrate this war of the giants; yet certain points seem to be fairly well established. First among them is the realization that the Copenhagen interpretation forms a complete consistent system capable of integrating, at least in principle, all of the atomic facts which are now known or which are likely to be discovered by an extension of the present theoretical and experimental methods. Many physicists share Einstein's hope that a better system may be found. Few, if any, would deny the success of the present system at least as a minimal interpretation. Secondly, the peculiar philosophy of Bohr, Heisenberg, and others, a sort of "semi-idealism" which holds that macroscopic objects are real but that submicroscopic objects become real only through being observed, is not based merely on a repudiation of metaphysics. It relies on the fact that any attempt to make meaningful statements about the behavior of an atomic system between observations must lead to contradictions. Thirdly, the problem of the nature of atomic reality is, at least in the literal sense, a "meta-physical" problem, since the problem of existence is beyond the scope of physics. This is indicated by the fact that both sides agree on the pertinent data and the mathematical formalism which describes it, while they are in complete disagreement on the reality described. Obviously, such a metaphysical problem cannot be solved by those who deny the possibility of metaphysics or by those whose philosophy is simply a linear extrapolation from physics. Finally, any metaphysical realist who treats this problem must be prepared to render a critical justification of his privileged information, a justification which physics proved incapable of rendering.

Before concluding this survey we must mention, at least briefly, the recent flurry of proposed alternative interpretations of quantum theory.³⁵ Chief among them, the source and inspiration of the others, is Bohm's interpretation of quantum mechanics in terms of hidden variables.³⁶ Through extended discussions with Einstein, Bohm became dissatisfied with the Copenhagen interpretation and began a critical re-examination of the foundations of quantum theory. He discovered that a suitable substitution could split the Schrödinger

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equation into two equations, one of which could be interpreted as describing the trajectory of a particle provided the conjugate equation is interpreted as an equation governing the behavior of a new unobserved quantum potential energy.³⁷ A similar idea had been proposed earlier by deBroglie and abandoned because it seemed to lead to inconsistencies. By carrying the "hidden variable" theory to its logical conclusion and introducing a new theory of measurement, Bohm demonstrated a way in which these apparent inconsistencies could be reconciled with the observed data.³⁸

Rather than extend this article by a discussion of inappropriate

³⁷The substitution $\psi = R \exp(2\pi iS/h)$ is made in the Schrödinger equation. The resulting equation for S may be interpreted as a Hamilton-Jacobi equation, provided the equation for R governs the behavior of a new quantum potential energy, U . DeBroglie had developed similar equations in 1927 but abandoned them because of difficulties in their mathematical formulation. Bohm's new theory of measurement seems to solve, or at least cover over, these difficulties. See Bohm II, Appendix B (*Physical Review*, LXXXV, 180-93).

³⁸David Bohm, *Causality and Chance in Modern Physics* (New York: Van Nostrand, 1957), chap. iii, gives rather convincing arguments to prove that the Copenhagen interpretation is not the uniquely possible interpretation of quantum mechanics.

³⁹Heisenberg, *Niels Bohr*, claims that Bohm's theory may be considered to be the Copenhagen interpretation expressed in a different language. Such a statement can be defended only on strictly positivistic grounds. It really sidesteps the main point of the new interpretation, its causal determinism.

⁴⁰We have deliberately omitted a mention of von Neumann's famous proof that the Copenhagen interpretation is unique, since his assumptions do not seem to apply to the hidden variables postulated by Bohm and others. This is discussed in Bohm, II sect. 9. See I. I. Zinnes, "Hidden Variables in Quantum Mechanics," *American Journal of*

Physics, XXVI (1958), 1-4, for an explanation of von Neumann's theorem and its assumptions.

⁴¹Heisenberg rejected this theory on the ground that it destroys the symmetry of the quantum equations, which he considers an essential part of the quantum theory. The implausible conclusions which we had in mind are first the quantum potential itself. As Bohm and Aharanov (*Physical Review*, CVIII, 1070-76), used it in explaining the ERP paradox the quantum potential between two photons is strong enough to determine the polarization state at a distance of several feet. It should be noted that this "explanation" violates the most essential condition of the original experiment, the requirement that a measurement in System I does not affect System II. Secondly, the proposed instantaneous interaction violates one of the basic postulates of special relativity. Bohm's answer, that the interaction cannot transmit a signal, does not seem to be consistent with the causal interpretation, since the quantum interaction signals the polarization state of one of the two photons. Finally, his theory leads to results which do not seem physically reasonable. The velocity of the unobserved particle varies from zero (for states with zero angular momentum) to infinity (for certain types of double slit experiments). However, the basic objection to the theory is the one mentioned in the text; it is a completely gratuitous theory which has no experimental verification.

technical details, we will, rather arbitrarily, present our own view on the present status of Bohm's theory. There are two points to be considered. First, the question, Is the Copenhagen interpretation the only possible interpretation of quantum theory? Bohm's detailed treatment of this point seems to show that any such assumption is unwarranted. That is, the assumption that there can be no more to atomic reality than is included in the formalism of quantum theory is based on the same positivistic limitation of scientific theory to explicit evidence that led Mach to deny the existence of atoms. Bohm, at least in his later works, presents his own hidden variable theory as an illustration of a possible alternative explanation of quanta. By its very construction and the interpretative postulates introduced, it is mathematically equivalent to the standard theory.³⁹ That such a theory can succeed at all seems to be proof enough that the Copenhagen interpretation is not the uniquely possible explanation of the facts.⁴⁰ On the other hand the fact that the new theory is self-consistent and mathematically equivalent to the established theory does not guarantee its reasonableness as a physical theory.

The second point, clearly a matter of opinion, is the success of Bohm's theory precisely as a physical theory. Because of the arbitrary foundation on which it rests, the purely gratuitous assumptions introduced, the highly implausible conclusions that result from it, and the complete lack of corroborating evidence we must conclude that his theory, in its present form, is unacceptable.⁴¹ Bohm, and the other "causal theorists" keep promising new improved versions which, they hope, may contribute to a clarification of the difficulties in the present quantum field theories. Until and unless such promises are fulfilled, the Copenhagen interpretation will remain the "orthodox interpretation" of quantum theory.

CONCLUSION

The Copenhagen interpretation is an interpretation of quantum theory developed by Bohr and Heisenberg and extended by Born, Pauli, Dirac, and others. In spite of a long history of formidable opposition, it has been generally accepted as a self-consistent, physical, reasonable way of interpreting the known data on atomic and sub-

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atomic phenomena. Its essence, as a *physical* theory, involves a re-interpretation of the purpose and program of physics. Formerly, physics was expected to give a causal explanation of the behavior of objects chiefly in terms of space and time variables. The new physics uses these variables, but in a different way, as a means of correlating the observations that can be made.

For macroscopic objects the distinction is inconsequential; for submicroscopic events it is critical. Here the very observation—that is, the phenomenon observed considered as an irreducible unit—is the thing which science must explain. Any attempt to go beyond this by introducing a distinction between the observation and the object observed inevitably leads to causal anomalies when one tries to make meaningful (that is, capable of being verified, at least in principle) statements about the behavior of the object. Hence, Bohr concluded, any attempt to construct precise conceptual models of objects must be abandoned as a matter of principle. However, imprecise models,—for example, particles and waves—may be used within certain limits. These “pictures” are allowed and to some extent necessary, not to slake a metaphysical craving but to supply a means for applying the ordinary concepts and language on which understanding depends. From this understanding a complete quantum theory has been developed. Consequently, post-Copenhagen physicists can concentrate on the mathematical formalism and its applications, and completely prescind from the semiphilosophical problems of interpretation.

The *philosophical* conclusions drawn from this theory, and apparently underwritten by its overwhelming success, are really nothing but a restatement of the physical principles in philosophical language. If one had to pin a label on this philosophy, it might be classified as a semi-idealistic metaphysics coupled to a positivistic theory of knowledge. That is, beyond the atomic phenomena there is nothing else. No meaningful way to speak of atomic objects or “things in them-

⁴²Henry Margenau, *The Nature of Physical Reality: A Philosophy of Modern Physics* (New York: McGraw-Hill, 1950), p. 12, has given a vivid description of the confusion of physics with metaphysics that is sometimes encountered: “Many reputable scientists

have joined the ranks of the exterminator brigade, which goes noisily abroad chasing metaphysical bats out of scientific belfries. They are a useful crowd, for what they exterminate is rarely metaphysics—it is usually bad physics.”

selves" can ever be found. These philosophical conclusions rest on two submerged but necessary assumptions.

The first assumption is that the Copenhagen interpretation represents an inherent limitation in knowledge which future generations of physicists will never be able to by-pass. Bohm and others have shown that this is an assumption and not a necessary consequence of the theory. The history of science teaches that few prohibitions limiting future scientists to the then current limitations have proved successful. However, it must be admitted that nothing in the present development of physics indicates that a return to a deterministic physics is likely. The opposite, a further departure from classical ideals, seems much more probable.

The second assumption is that metaphysical statements about atomic phenomena are meaningless. Apart from the general tenor of positivism, two reasons may be given for this rejection. The first is a misunderstanding, partial or total, of the nature of metaphysics.⁴² Metaphysical statements, according to this misinterpretation, are statements that go beyond the available evidence. An example would be a statement of the behavior of "observed" particles between observations. The second and more basic reason is epistemological. The Copenhagen theory, as Bohr sees it, represents a rational utilization of *all* possibilities of unambiguous interpretation of measurement. Accordingly, he envisions no grounds on which further pertinent statements of any sort can be based. Implicit in this, to be sure, is a rejection of any distinction between fundamentally different ways of knowing. The metaphysical realist, the man who, according to Heisenberg's thumbnail sketch, holds that "things are really there," must be prepared to give some sort of an answer to such elementary and obvious questions as: "What is really there?" and "How do you know?" We hope to treat these problems in a subsequent article.

Congress has a program of intellectual co-operation under which foreign philosophers have been invited to lecture in Indian universities with the help of the governments of the countries concerned. Visiting American Fulbright scholars attend its sessions and contribute much to the discussions. For the past three years a delegation of Soviet philosophers has attended, thus giving its sessions a world-wide aspect. Mr. Nikunja Vihari Banerjee, Professor of Philosophy at Delhi University, presided over this year's session. He discussed perceptual knowledge as an ultimate datum, standing in no need of explanation and giving rise to no philosophical problem worthy of the name. Professor V. V. Akolkar of the Amaravati University, in his presidential address to the section on psychology, showed that the findings of modern psychology agree very well with the psychological systems of Indian philosophy. There were other presidential addresses to the sections on the history of philosophy and metaphysics, dealing, respectively, with the historical evolution of metaphysical logics and the value considerations of various systems of epistemology. All in all, some fifty papers were read and discussed. Ten of these were published in the "Proceedings" of the congress.

AN INSTITUTE IN LOGICAL THEORY was presented by Georgetown University from June 13 to July 23. The institute was offered to call the attention of teachers of logic to two important recent developments in logic: the development of mathematical logic with its beginnings in Boole and Frege and its growth in Russell, Whitehead, and others; and the revaluation taking place as regards the nature of both Aristotelian and medieval logical theory. The visiting lecturers were Irving Copi, of the University of Michigan; Henry Veatch, of the University of Indiana; and Otto Bird, of the University of Notre Dame.

THE JAPANESE SOCIETY OF MEDIEVAL PHILOSOPHY has published the second volume of its *Studies in Medieval Philosophy*. Founded eight years ago, and now numbering more than two hundred members, this society encourages medieval studies in Japan by fostering communication with European specialists of the Middle Ages and in facilitating publication in works devoted to this period. The society is one of the most vital and important among Japanese academies. The task of translating the technical terminology of medieval philosophy into Japanese is, admittedly, almost insuperable. Yet these publications of the society constitute an impressive beginning. They are, moreover, an instance of actual communication between Eastern and Western thinkers in a common philosophy.

THE SECOND ANNUAL ST. AUGUSTINE LECTURE was held at Villanova University on April 24. Under the general title, "St. Augustine and the Augustinian Tradition," this series of lectures is intended to contribute significantly to a fuller understanding of the personality, doctrine, and influence of St. Augustine in the history of ideas. This year's speaker was Dr. Raymond Klibansky, Professor of Philosophy at McGill University, Montreal.

THE AQUINAS LECTURE FOR 1960 was delivered by Professor Victor M. Hamm of Marquette University. Its title was "Language, Truth and Poetry."

THE ELEVENTH ANNUAL MEETING OF THE METAPHYSICAL SOCIETY OF AMERICA was held at the University of Notre Dame, March 18 and 19, 1960. On Friday afternoon, a panel under the chairmanship of Charles Hartshorne (Emory University) discussed "experience." The first member of the panel, Alan Pasch (Ohio State University), introduced the question. He concentrated on the presuppositions which philosophers make when they approach this topic and singled out sensationalism for making unduly limiting presuppositions. Under this heading, however, he included indirectly most empirical approaches. Herbert Spiegelberg (Lawrence College) gave a phenomenological account of experience, centering his exposition on intentionality, transcendence, temporality, and the relation between experience and the experienced. John Yolton (Kenyon College) viewed experience as a kind of encounter and related it to biological and physical processes.

The presidential address was delivered after the banquet, the Reverend Leo R. Ward, c.s.c. (University of Notre Dame), serving as chairman for this session. The president of the society, Richard McKeon (University of Chicago), took as his topic "Being, Existence, and That Which Is." By the expression "that which is," he meant to translate the Greek *to on* and the Latin *ens*; by "being" he meant essence or substance, and by "existence" he meant the interaction of things in space and time. He contended that "that which is" was the notion that most adequately enabled a philosopher to solve the basic problems, whereas the notions of "being" and "existence" raised problems that they could not solve adequately. The discussion on this paper was led by the Reverend Robert F. Harvanek, S.J.

The plenary session on Saturday dealt with the categories; the chairman was the Reverend George P. Klubertanz, S.J. (Saint Louis University). The first paper, by John Herman Randall, Jr. (Columbia University), introduced the topic by giving a synthetic historical account of the use of categories by various philosophers, distinguishing the various functions assigned to the categories, from that of general pervasive traits of being to the Kantian

sense of a-priori forms. The second paper, by the Reverend Joseph Owens, c.ss.R. (Pontifical Institute of Mediaeval Studies, Toronto), examined the notion of category in Aristotle. The third paper, by Stephen Toulmin (visiting professor, Columbia University), presented the notion of category as this is used by contemporary analytic philosophers, in the sense of an interpretative scheme whose use is governed by the character of things and of our activities in dealing with them.

The session on Saturday afternoon dealt with values; its chairman was Newton P. Stallknecht (Indiana University). John E. Smith (Yale University) gave a pointed summary of an essay he had written for the Hazen Foundation dealing with the conditions for making sense in talking about values. He argued that value is not a simple fixed quality that could be intuited but implies a norm and a judgment; he also maintained that it is present in all experience and is not sharply distinct from fact. There were three commentators. William Gerhard (Brooklyn College) tried to give a foundation for value in the concern which the self has for the self it could be; Charles J. O'Neil (Marquette University) argued that value could not be based on law since law implies good as a prior element; Charner Perry (University of Chicago) argued that if values were not merely customs and attitudes, they were not beliefs either.

THE UNIVERSITY OF NOTRE DAME has announced the publication of a new philosophical journal, the *Notre Dame Journal of Formal Logic*. Under the editorship of Boleslaw Sobocinski, of Notre Dame University, the first issue appeared in January, 1960. Other issues of the quarterly appear in April, July, and October. "The Journal will be devoted to symbolic logic and its applications, to metalogic, semantics, the foundations of mathematics, to the history of logic and to fields immediately related to logic." Subscription price is \$6.00 a year.

THE LEICESTER UNIVERSITY PRESS, under the editorship of Professor P. H. Nowell-Smith, last January began to publish a new quarterly, *Philosophical Books*. "The purpose of this periodical is to provide up-to-date information about books on philosophy published during the preceding period. Reviews will be from three hundred to fifteen hundred words in length and their purpose will be to provide information about the content and style of the books rather than critical discussion." Unfortunately the selection of books will be confined to those available in the United Kingdom, although the quarterly hopes "at a later stage" to extend the range of the books. The subscription rate is \$2.00 a year or fifty cents a copy. Issues will appear in January, April, July, and October.

THE UNIVERSITY OF CHICAGO PRESS published last January its first issue of *Midway*. It is described as "a scholarly magazine edited for the general reader" and ranges over all the fields of the arts and sciences. Its special purpose is the reader's "instructive entertainment." In the first issue a famous psychoanalyst (Frieda Fromm-Reichman) examines the forms of loneliness, a neurosurgeon asks what and where the soul of man is, and a research psychologist (Arthur Gladstone) tells us why everybody needs an enemy. There are some poems by John Logan. Subscription price is \$3.50 for one year.

THE REVEREND I. M. BOCHENSKI, O.P., of the University of Fribourg, will be a visiting Rose Morgan Professor at the University of Kansas during the fall semester, 1960.

THE PHILOSOPHY OF SCIENCE INSTITUTE of St. John's University will treat this year of the philosophy of biology. Four guest lecturers are on the program. Dates and titles of their papers are: October 15, "The Evolution of Method in Biology," by L. P. Coonen; November 12, "Aristotle's Anatomy of Mind," by Charles De Koninck; December 10, "What is Biology's Starting Point?" by Kurt Goldstein; January 7, "Evolution: Its Scientific and Philosophical Dimensions," by the Reverend Raymond J. Nogar, O.P.

T H O M A S L A N G A N, *Indiana University*

***The Triumph of Subjectivity: An Introduction to Transcendental Phenomenology.* By J. Quentin Lauer. New York: Fordham Univ. Press, 1959. Pp. ix + 185.**

Father Lauer's Sorbonne thesis, *Phénoménologie de Husserl*, perplexed some of Husserl's disciples by its relentless insistence on the master's transcendental idealism. In view of the reaction in some quarters, I was curious to know whether Father Lauer had softened his stand in this new work, which is not, by the way, a mere rewrite of the thesis but a rethinking in English of his earlier French research. Father Lauer has not budged an inch. He still interprets the continual evolution in Husserl's thought as the movement of an idealism gradually taking a more explicit possession of itself. Father Lauer summarizes Husserl's contribution to the idealist tradition in these terms:

It has been said, not without justification, that Kant rediscovered Plato and re-expressed Plato's ideal forms in terms of subjectivity. It might, with equal justification, be said that Husserl rediscovered both Plato and Kant, seeking to express the positions of both in terms of constitutive intentionality. Plato saw essences as necessary and immutable; Kant strove to explain their necessity and immutability in terms of a formal subjective *a priori*; Husserl sought to achieve the same goal in a framework of formal *and* material *a priori*. Plato had recognized that, if there is necessity at all, it belongs to the ideal order. Kant has specified the ideal order as belonging exclusively to subjectivity and its necessity as attaching solely to the formalizing function of reason. Husserl sought to extend necessity from form to content, thus apriorizing the whole of knowledge—content as well as form.¹

Husserl, then, remained utterly faithful to his original Cartesian vocation (did he not, late in his life, choose for his Sorbonne lectures the title *Méditations cartésiennes*?) of searching for a way to extend to the whole of human inquiry the scientific rigor enjoyed so preëminently by the mathematics he had first pursued in the university. The purpose of

¹p. 79.

³*Ibid.*

²p. 143.

science is to *guarantee* the objects of consciousness. By the time Husserl wrote the *Formal and Transcendental Logic* he was coming to realize what had to be done in order to uncover the ultimate ground of any and all of consciousness' objects. Without the constitutive activity of the subjectivity there would be no objects at all. If there are to be certain scientific objects these will owe their status *as* scientific, as well as everything else about them, precisely to the way they have been reconstituted. Husserl can say, therefore, that those objects have achieved the status of scientific which have been properly constituted according to the canons of reason. "The supreme guarantee of truth is the assurance that a judgment has been commanded by reason; such a judgment cannot be erroneous—if it were it would not be a judgment of reason."² But can we determine that a particular judgment is a judgment of reason? Husserl is persuaded that we can, that there are laws of rational constitution, and that phenomenology can and must discover and explicate these laws. Husserl was convinced that by the end of his life he had made an important contribution to the explication of those laws. Such an endeavor alone is worthy of the name of philosophy, for it alone achieves something permanent. Lauer explains,

Certitude, of course, demands an assurance of permanence, and no factual judgment simply as such contains within itself this assurance. Permanence can be secured only by inclusion in the sum total, which by its totality is endowed with permanence. Such a totality is the pure transcendental subjectivity, the ultimate guarantee of reason itself—not in the sense that there has to be a guarantee that reason is infallible in its operation, it is that by definition, but in the sense that we must be sure that it is reason which is in operation. This assurance is to be found only in the complete grasp of that whole which is subjectivity.³

That is why the later Husserl devoted himself so much to disengaging the outlines of the structure of that "whole" which is the subjectivity. Husserl was not basically concerned to guarantee particular truths or to describe particular phenomena of consciousness but to achieve those basic discoveries about the consciousness' "making being *be*" that had to be secured before any particular truths could be established on an ultimately unshakeable foundation. As Husserl began gradually to realize that *time* was the essence of consciousness' over-all structure, he not only continued to advance the phenomenological unveiling of consciousness as the only meaningful form a higher wisdom can take, but he moved dangerously close to degrading the importance of the *matter* that is to be found in such a temporal consciousness. Feeling secure in his bastion of a thoroughly described formal consciousness, Husserl could afford to flirt with an

empirical relativism. Every perception is subject to subsequent correction by following perceptions, and the only validity a sensation can enjoy is one of permanence, as Father Lauer says, meaning it must be continually taken up again and corroborated by the continuing moments of the stream of experience. Along with this destruction of any possibility for sensation to be a path to a content of eternal truths, goes, as one might expect, a frank upgrading of practical truth. We read in the *Formal and Transcendental Logik*:

Every real truth without exception (be it daily truth of the practical life, or truth of the sciences, no matter how highly developed) remains by essence in *relativities* which can be related normatively to *regulative ideas*. The merchant has his market-place truth; is it not in its sphere a good truth and the most useful to the merchant? ⁴

A text such as this suggests that there is good reason for Lauer's prosecution of the great phenomenologist under the charge of subjective idealism. That Father Lauer's portrait of Husserl as a constitutive idealist makes clear this tendency or, if you prefer, danger, lurking in Husserl's thought even the most realistic interpreter of phenomenology will have to concede. But with this mighty blast the battle over interpreting Husserl has not yet come to an end. Just in the last spring issue of this journal we read Jean Ladrière's assurance that Husserl had confessed in the *Krisis* (to which terminal work Lauer gives short shrift) to "leading us too quickly (in the *Ideen*) to the Ego and of putting us in front of a subjectivity which is apparently void of any content."⁵ The texts of the *Krisis* authorize an interpretation in which the earlier reduction to the transcendental ego is to be identified with the *Krisis*' *epoche* which reveals the full splendor of the *Lebenswelt*. According to this interpretation, then, what Husserl finally came to was indeed a constitutive transcendental Ego, but he discovered that what this Ego really constitutes is the full "lived world" in which it discovers itself as part of a reality which it does not create and upon which it in fact depends. The world can only *be* by being known; but when it is known, it is in such a way that it reveals itself to be ontologically prior; it reveals itself as the source of the individual subject.

The now familiar spectacle of the collision of respected interpreters over the ultimate sense of Husserl's philosophy has its origin, in my opinion, in a serious tension of contrary drives in Husserl's program. Husserl the empiricist, convinced of the importance of seeing things "as they really

⁴P. 245.

⁵Ladrière cites *Krisis*, p. 158 in *THE*

MODERN SCHOOLMAN, XXXVII, No. 3, 180, n. 9.

are" and convinced that they really are as utterly individual events, moments in a continual flux of empirical experience, ironically begets Husserl the idealist, the critical philosopher, because his very empiricism leads him to reject any hope of discovering in "things" principles of a wisdom and therefore to seek the unity of "being" in the subjective unity of consciousness. The tension arises from an unresolved difficulty inherent in the empiricist-idealist position as such. Every step bringing the thinker closer to the subjective unity of experience is a step away from the "material" content of that experience, which is of no importance when "form" becomes the foundation of unity.

The clarity and the consistency of Father Lauer's book make it an excellent starting point for anyone wanting to enter this controversy (and the best statement of the interpretation of Husserl as an idealist I have ever seen). In view of the great problem of interpretation described above, it would be best to read it with a reservation in mind—namely that Father Lauer, in view of the position he is taking, very legitimately avoids taking pains to emphasize the elements in all of Husserl's works that remind us of Husserl the empiricist. Dialogue with this excellent statement of Husserl's penetration to the heart of the constitutive transcendental Ego demands we ascertain whether Husserl was able to reach a realism in the very bosom of this idealism. In this regard, two earnest questions need to be asked. Is Husserl's rediscovery of the Other from within the heartland of the ultimate reduction really convincing? (Lauer would have us rightly regard the "solutions" in the last *Cartesian Meditation* with greatest critical reserve.) Secondly, just what is Husserl's notion of the nature of the "thing" we are supposed to encounter in the critically-assured *Lebenswelt*? This last point of inquiry may lead us to discover that Husserl's empiricist presuppositions have survived all the wondrous mechanism of *epoche*, which, if so, would vindicate Lauer's brilliant attack on the pretensions of phenomenology to be "philosophy without presupposition."

The argument of the commentators over the "ultimate" meaning of Husserl turns on a single point. Was Husserl in his moment of supreme idealistic formalism, at the moment he focused most clearly on the transcendental Ego as constitutive of an experience according to the form of time, able to discover in the ecstatic horizons of subjective experience a material objectivity, the concrete richness of which then becomes the central concern of a human wisdom? Many will argue with Ladrière that Husserl's program never deviates from the great war cry of the *Logische Untersuchungen*, "To the Thing Itself," and claim that the whole critical process mounting through the progressive reductions of *Ideen I*, the *Formal and Transcendental Logic*, and the *Cartesian Meditations* is part

of an ultimate critique intended to liberate the "thing" from the limitations imposed by every presupposition, all of which is necessary because these is nothing more difficult and no effort needing more constant renewal than the return to the "thing." Texts like this one from the *Formal and Transcendental Logic* indeed manifest just this feeling:

Judging in a naive evidence signifies judging on the basis of a giving of the thing 'itself,' and submitting oneself to the constant question, what must one 'see' there effectively and how can one succeed in expressing it faithfully; it is then judging with the same method used by the knowledgeable practical man when it is important to him to 'find out how things really are.' That is the beginning of all wisdom although it is not the end, and it is a wisdom with which one can never dispense, no matter how profoundly one may be engaged in theorization.⁶

VERNON J. BOURKE, *Saint Louis University*

***Our Public Life.* By Paul Weiss. Bloomington: Indiana Univ. Press, 1959. Pp. 256. \$4.50.**

From his student days onward, Paul Weiss has showed an interest in system. His present book (part of which comprised the Mahlon Powell lectures at Indiana University, 1958) offers a systematic framework for a but partly developed public philosophy for twentieth-century man. It is the work of a mature thinker and well worth careful reading.

While he insists that there is an important dimension of human life that is private and personal, Weiss here concentrates on certain stages in the group life of man. These are society, the state, culture, and civilization. The pattern is developmental. Weiss speaks (p. 17) of man moving, "out of inferior into better states of affairs, e.g., from conventional, traditionalized societies to states, to cultures, and then to civilization." Roughly, the first half of the book is devoted to man in society.

Strongly influenced by Plato, Weiss thinks that at least four classes are necessary to a mature human society: the "empowered," the "reasonable," the "prestigious," and the "productive" classes. What he seems to be saying is that the *Republic* has no class for Plato himself. The prestigious class is the subgroup of "priests and teachers, poets and sages." These are the bearers of the values of their society.

This discussion of human society introduces a lengthy exposition of

⁶P. 246.

man's rights, laws, and, in particular, natural law. Even positive law is taken to be "prescriptive"; it imposes quite real obligations, but backing it up is Natural Law (in capitals). Pithily put, "The law has to answer, sooner or later, to man's conscience" (p. 115). This is not to say that natural law is identical with the dictates of moral conscience. What Weiss does with natural law will commend itself, in part though not entirely, to Thomists. His natural law has four preliminary characteristics: it is natural, not supernatural; it is a work of nature, not of human effort; it is concerned with the public nature of man, not with his private acts; finally, it results from the operation of impersonal forces, is not the product of volition (see pp. 157-58). Though normative, it is not universal; there are different natural laws in different societies. Yet it is not "social law."

Now the difficulty with all this (as with most other theories of natural law) is that Professor Weiss knows what his natural law is, and he expects other members of his society to recognize it—but they don't. He is like an honest poker player clearly reciting the rules in a crooked game.

After the state and culture comes civilization. We haven't got it yet. The United Nations is confused and ineffective. Civilization would be the optimum development of all mankind in a functioning social group. It is refreshing to see this presented as an attainable ideal.

LOUIS A. BARTH, S.J., *Saint Louis University*

Philosophy and Linguistic Analysis. By Maxwell John Charlesworth.
 "Duquesne Studies, Philosophical Series," 9. Pittsburgh: Duquesne Univ., 1959. Pp. xiii + 234.

Can traditional philosophy find enrichment through contact with linguistic analysis as it has through its association with idealism and existentialism? This study, which is the author's doctoral dissertation at the University of Louvain, concludes on an affirmative note. Linguistic analysis has made the traditional philosopher reflect more critically on the nature and role of philosophy, and it has provided him with valuable philosophical technique. The young Australian philosopher develops this thesis earnestly in his sympathetic yet critical presentation of the origin and growth of analysis in Great Britain. To treat analysis as if it were a unified movement would be misleading and unprofitable; so the author studies each of the prominent philosophers individually, stressing what each has contributed to its gradual elaboration, and the result is an accurate and reliable account. The critical passages are written from an

internal viewpoint and, while fairly numerous, are not carping or rhetorical. Although the author is most concerned with establishing his conclusions, he has brought together a body of valuable information on linguistic analysis systematically and clearly stated. The work will serve admirably as an introduction to the analytic movement.

Linguistic analysis is often mistaken for logical positivism or some other form of empiricism by those unacquainted with it. The distinction between these various movements is insisted on, though it is admitted that analysts may hold some views in common with the positivists and empiricists. Though mathematical logic furnished concepts and techniques for analysis through the work of Frege, Russell, and Wittgenstein, the author disclaims any direct connection between them and generally tends to minimize the influence of logic on linguistic philosophy.

The appearance of G. E. Moore's "The Refutation of Idealism" in 1903 marks the beginning of analysis. In this essay Moore displayed his skill in using an unwonted method of philosophizing which was to prove a greater contribution to the growth of analytic philosophy than the theories he formed. Russell's place in the history of analysis is hard to overemphasize, for he gave the new movement a logical and epistemological grounding, bringing to it new technical concepts such as his theory of logical form, the theory of types, and the notion of the ideal language. In his research into the foundations of pure mathematics he had developed these theories, but he did not see their full application until he had ceased "taking language for granted." Today the octogenarian Russell maintains his hope in analysis as the one method for progress in philosophy, but unlike contemporary linguistic analysts he feels that philosophy should say something about the world. A more comprehensive view of his philosophy than the author has given would aid the reader in assessing Russell's real worth and the extent of his contribution. As it is, Moore receives more coverage than Russell.

Today's analysts are more concerned with Frege and Wittgenstein than with Russell. Although Charlesworth gives Frege only brief mention and does not present any of the leading ideas of the German mathematician and logician, he discusses at length Wittgenstein's *Tractatus Logico-Philosophicus* and *Philosophical Investigations*. He insists rightly that the eccentric Austrian was not a logical positivist though his writings are susceptible of such an interpretation. It is in the thought of Wittgenstein that linguistic analysis reached its mature development. To him the other analysts go for ideas and inspiration. For Wittgenstein all philosophical problems arise from the misuse of language, and when they are subjected to analysis they are seen for what they are, pseudoproblems. The function of philosophy is essentially critical and analytic; it points out the

structure of language in general, or it shows just what kind of language-game one is playing. Consequently philosophy is therapeutic and shows how ordinary language is correctly to be used. The author sees analysis assuming in Wittgenstein a philosophical neutrality which really constitutes its originality in the history of thought. Though the treatment given here does not have the profundity or the detail found in studies such as that of Miss Anscombe, it is to be recommended to all who seek help in reading Wittgenstein.

The logical positivist interlude, whose beginning was marked by the publishing of Ayer's *Language, Truth and Logic* in 1936, is interpreted as the crisis through which analysis had to pass in order to achieve self-realization. Ayer and all who were lured by the charms of verifiability from the path of true analysis have returned little by little, and analysis now recognizes its own nature.

Contemporary analytic philosophy both at Cambridge and at Oxford consists in a development of Wittgenstein's insights for the most part. John Wisdom and the Cambridge group have made therapy their cardinal idea. For them philosophical analysis, like psychoanalysis, proceeds by way of paradox; but it reveals to the mind what is hidden in the obvious experiences of life and thus leads it to a solution of philosophical puzzles. The clarification of linguistic misuses is only the beginning of philosophical therapy. The Oxford analysts, on the other hand, develop the theme of ordinary language. They think of meaning in terms of *use* and point to ordinary language as the criterion of significance.

Dr. Charlesworth concludes that the analysts are wrong in denying the reality of philosophical problems even though he agrees that some pseudo-problems may arise from the misuse of language. To view language as something apart from its function of meaning and to divorce meaning from what is meant is fallacious. This mistake has led to the attempt to "infer" from the structure of language to the structure of reality. Meaningful language is characterized by its extralinguistic reference, without which it has no significance.

Although the claim that philosophy is analysis and therapy is excessive, the author agrees that philosophy is partly analytic and therapeutic in its method. The method of epistemology is almost wholly so. Metaphysics as implicitly understood by Aristotle and St. Thomas has a method which is in part analytic, negative, and therapeutic. It is thought that we owe this new insight to linguistic analysis and that it is of importance. To maintain this, however, is not to rob metaphysics of its epiphanic nature; it still has as its primary function to illuminate the intelligible mysteries implicit in our daily experience. Charlesworth does not develop his reasoning sufficiently to be convincing. In view of the rather extensive controversy

among Thomists on the nature and method of metaphysics, a more profound and detailed discussion is needed. Perhaps the analysis and therapy allegedly practiced by the metaphysician are not properly metaphysical but rather preparatory to metaphysics in the sense of being linguistic and logical.

In Charlesworth's opinion linguistic analysis has made traditional philosophy and in particular Scholastic philosophy freshly conscious of the philosophical urgency of language taken precisely as an instrument of meaning. It is its reference to what is meant, the extralinguistic, that determines the meaningful use of language. The philosopher investigates the necessary conditions for the meaningful use of language and by doing so investigates the necessary structure of reality. Contemporary philosophers have called into question the use of subject-predicate expressions and favor relational propositions. If one should reason that subject-predicate expressions are indispensable in certain contexts, this is equivalent to saying that there are substances and properties. Though the existence of substance and properties is a metaphysical problem, it can be formulated in linguistic terms; that is, in terms of subject and predicate. The ontological formulation of the problem is in terms of substance and property. The advantage of the linguistic formulation is that it renders the problem more tractable.

Thomistic philosophers, among them Gilson in his *Being and Some Philosophers*, have recognized that the deepest metaphysical problems are involved in every-day language and that grammar is closely related to metaphysics. Between language and the extramental object there is knowledge in all its complexity. Charlesworth seems to simplify this bewildering complication and to push on to his conclusions too enthusiastically. To reassure he must make clear that he has successfully coped with the network of problems involved. Likewise he must overcome the impression that what he calls the investigation of the necessary conditions of meaningful language and the linguistic formulation of metaphysical problems leads not to an existential metaphysics but to an analysis of concepts. Despite these reservations the reviewer considers this study a substantial addition to the literature on the analytic movement.

CYRIL VOLLERT, S.J., *St. Mary's College*

***The Phenomenon of Man.* By Pierre Teilhard de Chardin. Trans. Bernard Wall. With introd. by Sir Julian Huxley. New York: Harper & Bros., 1959. Pp. 318. \$5.00.**

Among the hundreds of Teilhard's published and unpublished writings, ranging from brief technical articles that describe some newly discovered

fossil to volumes that treat of such mammoth problems as the origin, future, and final consummation of the universe, highest eminence is commonly assigned to *Le phénomène humain*. Although it was composed between 1938 and 1940, with supplementary material added in 1947 and 1948, it did not appear in print until 1956. Since then, in its original French or in translations, it has become one of the most discussed books of our time.

To do justice to the Jesuit paleontologist, to evaluate his work fairly, and to eliminate inept criticisms, we must note and keep in mind the position from which he regards man. The point of view is not that of metaphysics or theology. Teilhard de Chardin was neither philosopher nor theologian, but a scientist; he repeatedly cautions us that the book is to be read as a scientific treatise. He does not attempt to uncover ontological and causal relations among the elements of the cosmos but undertakes only to set forth experimental laws designed to express the successive appearances of those elements in time. To this end he has taken man as the center of the universe and tries to establish around him a coherent order between antecedents and consequents. Hence he leaves vast room for further studies on man from the angles of philosophy and theology; in fact, on occasion, he points out places where the philosopher or the theologian may conveniently step in to contribute refinements and complements of a higher order. Accordingly, he offers not a complete explanation of the world and of man but only an introduction to such an explanation. He acknowledges that his treatment may properly be designated as "hyperphysics" but insists that it is not metaphysics.

The very title of the book reveals its level and its scope. Man, as he occurs in history, is a genuine fact that falls, at least in part, within the range of science; and mankind as a whole is a phenomenon to be examined, analyzed, and described like other phenomena. A phenomenon is something to be observed; Teilhard endeavors to *see* man, to *show* what has happened to him when situated squarely within the framework of phenomena and appearances, and to *envision* what is to become of him. To behold man in this way, we must view him in the only perspective that will display him in his relationship to the rest of the cosmos; that is, in the perspective of evolution.

Animating Teilhard's quest is the desire to trace out the direction evolution has been taking since the very beginning and to discover the goal toward which the evolving universe and evolving life are converging. He believes that a scientific contemplation of phenomena discloses a definite orientation. His endeavor to discern the direction of evolution without appealing to metaphysical assumptions is one of his most original contributions to science. Once satisfied that he has discovered this direction, his

intention is to construct a spiritualistic evolution that will be more probable and more attractive than any materialistic theory. Unlike the champions of materialistic evolution, Teilhard explains the lower by the higher, matter and life by thought to which they tend, and thought by a final collectivity of human persons grouped about a hyper-personal and transcendent Center. He perceives the underlying dynamism of all evolution in the effort of consciousness, which permeates in an extremely diffuse and rudimentary way the primordial stuff of the universe, to construct increasingly complex organisms that seek, in their highest forms, an eventual liberation from matter. Owing to this force, nameless particles form atoms, which in turn form simple molecules; and the latter combine to form macromolecules. As evolution proceeds, a critical stage is reached after some billions of years; and passage to life is accomplished with the emergence of the first cells in the earth's seas. Rapidly the biosphere covers the planet; and more and more complex forms of life evolve, slowly groping upwards over the ages until the mammals culminate in the anthropoids.

The clue to understanding the direction of evolution is found in the gradual perfecting of the nervous system and the brain. Primates are interesting precisely because of their cerebralization. The process of specialization in limbs, teeth, and organs tended to imprison the horse, the stag, and the tiger, whereas the anthropoid remained malleable as his brain developed; evolution, we may say, went to his head. At length another critical point is crossed in a family of higher primates; thought is born and, without noise or fanfare, man enters the world.

With man, the "noosphere" or thinking layer of life begins. As the centuries pass, men multiply and group themselves into societies, which continue to develop in line with the laws of evolution. Here the author comes to the theme of his greatest interest; he ventures, by extrapolating his present reading of evolution into the far future, to predict the ultimate stage of human society. After a superorganism of humanity has evolved into a sort of vast collective person that does not destroy but perfects the individuals composing it, all men who co-operate in universal love with trends toward such unification converge upon an eternally pre-existing Center of attraction. This is the Omega Point which had guided the immense process from the beginning and which believers will have no difficulty in identifying with God. The materially exhausted planet dies; but "that percentage of the universe which, across time, space and evil, will have succeeded in laboriously synthesizing itself to the very end" achieves liberation in the last critical passage to a new form of life that is spiritual and immortal. "Not an indefinite progress, which is a hypothesis

contradicted by the convergent nature of noogenesis, but an ecstasy transcending the dimensions and the framework of the visible universe."

The grandeur of this vision can ill be conveyed in a brief summary which omits elaboration of details and step-by-step justification. It is undoubtedly one of the reasons for the enthusiasm aroused by the book. Teilhard leaves no one indifferent. Reactions have been both uncritical and hypercritical. Some of Teilhard's more ardent disciples regard his work almost as a sort of latter-day revelation of which every part has to be accepted with equal reverence and indignantly or scornfully repulse all adverse criticism. Others find fault at stages which, given the author's professed point of view, do not seem to be defective. Samplings of objections, whether justified or unjustified, may be briefly considered.

Teilhard has been reproached for fostering a neo-Pelagian theology to save the world by the natural forces of evolution. Of course he does no such thing. The unifying power of universal love, which becomes increasingly important in the latter phases of the human solidarity he forecasts, is expressly distinguished from the "super-intimacy" with God, and consequently with our fellow men, that is effected by supernatural charity. When he appeals to the "Christian phenomenon" to identify the form human society will more and more assume, he is aware that he is surmounting the plane of scientific observation and that the unification of mankind is but a natural tendency which is divinely utilized as a preparation for constructing the mystical body of Christ.

The ancient and continuing conflict between Christ and Satan is admittedly not brought out in the book; Teilhard had no intention of writing a theological summa. Nor does he teach the great truths of redemption and grace, although his synthesis leaves full scope for them. He speaks very little of evil, especially moral evil, but he does allow for it on his phenomenal plane and even faces the possibility that the inherent trend of socially evolving mankind toward Omega may be thwarted by human refusal. Original sin cannot be discovered by positive science; yet Teilhard notes that the quantity and malice of evil spread through the world suggests an excess that is inexplicable unless the effect of some primordial catastrophe has modified the normal process of evolution.

No satisfactory theory of creation is proposed in the book, and no mention is made of a beginning. Teilhard observes that creation, as it appears on the experimental level, conveys the ideas of condensation, concentration, unification; on the same plane, no backward-limit to a given universe is discernible. This view is scarcely surprising to anyone acquainted with the position firmly upheld by St. Thomas, that even on the higher level of philosophy no absolute beginning of created being can be demonstrated.

Teilhard's law of complexity-consciousness, according to which consciousness appears more clearly with increasing complexification of material being, seems to be open to no devastating attack. Creation of the spiritual soul with the advent of hominization is not contested by Teilhard; on the contrary, when opportunity offers, he indicates precisely where, for reasons of a higher order, such a doctrine may fittingly be introduced. Man came so silently into the world that when science catches its first glimpse of him he is already represented by a host of individuals throughout the old world from South Africa to China. Whether mankind took its origin from a single human couple or from a number of pairs, Teilhard does not say because he cannot say; the question completely eludes the scientist and must be settled by recourse to a transexperimental source of knowledge.

The theory of the appearance and development of life proposed by Teilhard seems to stand or fall with his assumption of "prelife" and "elementary consciousness" existing at all stages, even the lowest, of rudimentary cosmic stuff. Scientists are justified if they remain dubious about this hypothesis or reject it outright; certainly it has not been experimentally confirmed. Philosophers are within their rights if they insist on a clean break between nonlife and life. They may argue that either this prelife is not life, and then evolution has engendered a radically new form; or else prelife is true life, and then subatomic prelife has only the aura of not being life, with the consequence that everything is alive. In this connection, mutterings of "panpsychism" have been heard.

Perhaps the most valid objection to Teilhard's procedures is advanced on the score of methodology. Even some critics who are not unfavorable to the general thesis of the book discern a certain confusion in this respect. Unconscious soarings into the realm of metaphysics and deliberate excursions into theology not infrequently raise the level of discourse beyond Teilhard's professed phenomenology. This flaw has been discussed at length, among others, by C. D'Armagnac in *Archives de philosophie*, XX (1957), 5-41, and by L. Malevez in *Nouvelle revue théologique*, LXXIX (1957), 579-99.

If *The Phenomenon of Man* is read at all, it ought to be read at least twice. After a first perusal, which will lay bare the theme and will make the terminology familiar, it should be read a second time with close attention to the scientific point of view aimed at by the author. Criticisms that may then occur will perhaps be more of a scientific than of a philosophical or theological order; quite possibly, most of them may simply evaporate. In any case, the reader will be in a better position to appreciate the reality, difficulty, and urgency of the problem, and also the scale and form of the proposed solution.

***The Philosophy of Whitehead.* By Wolf Mays. New York: Macmillan Co., 1959. Pp. 259. \$4.25.**

The theme of Mays's interpretation of Whitehead's later philosophy is that "Whitehead's account does not seem to be as courageous nor as metaphysical as some philosophers have made it out to be, since what he seems to be doing is a sort of applied logic" (p. 20). Mays reduces the antitheses of the last chapter of *Process and Reality* between God and the world to two factors: the rational and permanent element in God and his primordial nature, which becomes a set of propositions of symbolic logic; and the experiential and temporal element in the world, which becomes the reification of the concepts of modern physics.

In this view, God in his primordial nature is the extensive scheme, an indeterminate and abstract pattern of logical relationships. Accordingly, the term "God in his Primordial Nature" refers to the n -adic ordering relation R , which is the logical framework in which events are related. And creativity becomes the field of force pervading space-time. Then, the coherent, logical necessary system in terms of which all experience is to be interpreted is the extensive scheme which becomes the cosmological scheme when determination is given it by the actual occasions of our present epoch.

Mays's position is that in the philosophy of organism Whitehead is largely manipulating abstractions and clothing them in concrete terms applicable to human experience in the manner of Lewis Carroll in *Alice in Wonderland*. This project involves two key notions: the postulational method of modern logic with its stress on complex relational systems and the field theory of modern physics with its stress on the historicity of physical systems. In fact, for Mays the philosophy of Whitehead's later period is the application of symbolic logic to reifications of notions of modern physics. For this reason, Mays charges that in spite of Whitehead's frequent warnings about the fallacy of misplaced concreteness, he does give a form of reality to the electro-magnetic field in the same way that the philosophers of the seventeenth and eighteenth century gave a physical reality to the physical concepts of that period.

Mays believes that this interpretation is based on evidence that is largely circumstantial, since it is based on attempts to set up correspondences between different parts of his writings. But he does offer one piece of direct evidence, Whitehead's remarks in reply to John Dewey at the American Philosophical Association in 1936. However, Mays overlooks Whitehead's explicit statement that symbolic logic has yet to be

applied to aesthetics, which at that time was considered by Whitehead to be the most fruitful starting point for philosophical generalization. On that occasion Whitehead declares, in terms of a program for the future, that symbolic logic may some day be the method of aesthetics, ethics, and theology. This is conditioned on the expansion of real variables beyond those of space, number, and quantity:

We must end with my first love—Symbolic Logic. When *in the distant future* [italics mine] the subject has expanded, so as to examine patterns depending on connections other than those of space, number, and quantity—when this expansion has occurred, I suggest that Symbolic Logic, that is to say, the symbolic examination of pattern with the use of real variables, *will become* [italics mine] the foundation of aesthetics (Alfred North Whitehead, "Remarks," *Philosophical Review*, XLVI [March, 1937], 186).

Since Whitehead explicitly declares that, at the time that he is speaking, he considers aesthetics to provide the starting point for metaphysical generalization and observes that symbolic logic is not sufficiently developed so as to work with real variables in the area of aesthetics, it seems that Whitehead is talking in terms of a program for the future development of symbolic logic and philosophy.

Further, Mays's position that Whitehead is manipulating abstraction in a philosophical wonderland is not in keeping with Whitehead's own insistence on the concreteness proper to philosophy in direct contrast with the abstractness proper to science. Although Mays often seems to be conscious of the fact that he is wrestling with stubborn texts, he does not recognize that his root problem is to perceive the questions that Whitehead sets out to answer and their properly metaphysical setting. But in this tightly reasoned study, Mays does render the service of heightening awareness of the strong influence of mathematics and modern physics on Whitehead's answers to those questions. However, the reduction of Whitehead's metaphysics to applied symbolic logic is an extreme position that appears to be irreconcilable with Whitehead's own statements concerning the nature of his metaphysical project.

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A History of Ancient Philosophy. By Ignatius Brady, O.F.M. Milwaukee: Bruce Pub. Co., 1959. Pp. xi + 261. \$5.00.

This is an undergraduate textbook, the first in a projected series of three volumes on the history of philosophy to be written under the auspices

of the Franciscan Institute of St. Bonaventure University. Though concerned chiefly with ancient Greek speculation it includes a section on ancient philosophy of the Near and Far East, referred to as "a prehistory of philosophy." After discussing the Greek philosophers the author departs considerably from the usual chronological divisions and adds a comparatively extensive discussion of oriental Scholasticism. The Muslim and Jewish philosophers are grouped with the ancients because they represent the Neoplatonic spirit and are closer dogmatically to the Neoplatonists than to their Christian contemporaries. So the volume begins with the ancient Eastern thought and ends with the death of Maimonides in the early thirteenth century. The second volume in this series will treat almost exclusively of philosophy as affected directly by Christian revelation. It will, however, touch again on the oriental Scholastics briefly "in order to avoid certain difficulties in the teaching of the history of philosophy." Needless to say there will be many who will debate the wisdom of this division of matter.

Father Brady has succeeded in writing a text for undergraduates which is intelligible and fairly easy to read. He has an eye for large trends in the history of philosophy and for generalizations which can benefit the undergraduate. For the most part he has avoided descending into details. This is understandable, but it has led to oversimplification and omission of rather important elements in the thought of more than one philosopher. A case in point is the theory of sense perception of Democritus, which is mentioned only in passing. In general the pre-Socratics are given too brief treatment. In addition to the testimony of Aristotle, more mention could have been made of the views of dependable secondary sources such as Burnet and Zeller and others.

Father Brady has chosen the Greek notion of *paideia* as a constant theme and relies heavily on Jaeger throughout his explanation of Greek philosophy.

In the section dealing with the thought of Plato the author takes the allegory of the cave from the *Republic* as being more or less representative of the substance of Plato's thought and in terms of it presents his explanation. In other words, the allegory serves as the framework around which Plato's thought is reconstructed. Although it would be an exaggeration and incorrect to say that he presents the "story-book Plato," too little attention is paid to the later Plato, the Plato of the *Parmenides*, the *Sophist*, and the *Laws*. It would seem necessary to take account of the doctrinal development and to avoid reducing Plato to merely the author of the *Republic*. Competent scholar that he is, Father Brady is well aware of the theories regarding change in Plato's thought; but he agrees with Cherniss in rejecting the view that the ideas are identified with numbers and

generated by the One and the Dyad as "a fabrication to explain later mutations of the theory of the Ideas and is without a shred of evidence" (p. 82). Aristotle's references to the Lecture on the Good are considered "vague" and "of little apparent value," though it is admitted that the problem needs further study (p. 82, n. 12). It would seem that contrary views are too easily set aside.

The sweep of this introductory text is vast, too vast, in fact, for proper coverage of the leading figures of antiquity. Despite its many merits it falls short of supplying a real need. The instructor who attempts to teach it will find that one semester—the usual period—will be too short. The student will be confronted with a medley of brief accounts of many thinkers and could become confused. More space should have been given to the dominant philosophers; and the Oriental thinkers both ancient and medieval, should have been mentioned only in passing.

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VIVERE VIVENTIBUS EST ESSE IN ARISTOTLE AND ST. THOMAS

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I. INTRODUCTION

The Aristotelian phrase, *vivere viventibus est esse*, with its aphoristic ring, became for the Scholastics a maxim to be thrown in wherever the argumentation allowed its application. It is found frequently in St. Thomas in different contexts and invoked to prove a variety of statements, sometimes his own, sometimes those of the objections presented in the dialectic of a given article. The maxim no doubt has an authentic Aristotelian meaning. In the background of the whole of the Stagirite's teaching, it should come alive as a peculiarly Aristotelian insight into reality. The question remains of what happens to the statement in its many uses and applications by a medieval theologian. Does it here retain its Aristotelian force? Or is it simply another limb of that "dead Aristotelianism"—a body of terms, distinctions, procedures, principles, and terse literal quotations which was the common property of the Scholastics—for each theologian to inform and suffuse with his own highly idiosyncratic spirit and meaning?

We are concerned in this paper with defining the meaning the phrase had in Aristotle and then seeing whether the meaning given it by St. Thomas is any different from its authentic Aristotelian sense. This object will take us into the respective teachings of Aristotle and St. Thomas that are relevant to an exposition of the phrase, and into an examination of other texts where it or similar statements appear. Let us first recall the text from which the phrase is taken.

But the soul is the cause of its body alike in all three senses which we explicitly recognize. It is the source or origin of movement, it is the end, it is the essence of the whole living body. That it is the last is clear; for in everything the essence is identical with the ground of its being, and here, in the case of living things, their being is to live, and of their being and their living the soul in them is the cause or source.¹

The chain of argument is clear. The point at issue is that the soul is the formal (as well as motive and final) cause of the body. Its role as formal cause is manifest from the general notion of what the "essence" (*ousia*) is; namely, the principle or cause of being (*to aition tou einai*) in all the things that are. Now, for living things, being is living. To say that they are is to say that they are alive. Since the soul is generally regarded as the cause of life in a living body, it is the cause of being and hence the *ousia*; that is, the "essence" in the sense of formal cause.

But for all the clarity of this brief syllogism, the text is dense with hastily sketched premises and unstated implications. The chief one is the meaning of "being" for Aristotle. Grammatical considerations do not help. All we have in the Greek is the infinitive of the verb "to be" used as a noun denoting the action signified by the verb; it can therefore receive the neuter definite article. The Oxford translation here puts for it the English gerund or verbal noun, to be understood as the name of an act and not as the participle identical with it in form, which functions as an adjective. *To einai* is then "the being" of a thing. This still does not explain why Aristotle regards the statements "a living thing is" and "a thing is alive" as identical.

Secondly, since the two are identified here, the meaning of "life" or "to live" is just as much at stake as that of being. Are there any peculiarities in Aristotle's doctrine to demand that "life" or "living"

¹*De Anima*, III, 4, 415b9-14. *The Basic Works of Aristotle*, ed. Richard McKeon (New York, 1941). For the Greek text see *Aristotelis De Anima*, ed. W. D. Ross (Oxford, 1956).

²"We resume our inquiry from a fresh starting-point by calling attention to the fact that what has soul in it differs from what has not in that the

former displays life. Now this word has more than one sense, and provided any one alone of these is found in a thing we say that thing is living. Living, that is, may mean thinking or perception or local movement and rest, or movement in the sense of nutrition, decay and growth" (*ibid.*, II, 2, 413a20-25).

be given a technical philosophical connotation beyond its ordinary meaning, insofar as he here identifies it with being? It must be emphasized that in a passage before this he has spoken of "life" in a quite commonplace sense, as the operations evident to us that lead us to call the things that so operate animate or living.² The word is ambiguous because it stands for a variety of such operations, but in every case it refers to one of those activities on the part of a thing that is a manifest sign of the presence of soul. This text must be kept in mind, since it will often be utilized as an opposite focus in the dialectical apparatus of St. Thomas against the maxim itself.

II. "THE BEING OF A THING" IN ARISTOTLE

Our problem, then, comes down to this: What is the nexus of Aristotle's equation of life and being for living things? Why is he able to link these two notions? We already have a partial answer in the brief statement that essence (etymologically an excellent translation for *ousia*)—if we mean by it the form or the formal cause of a thing—is the cause of that thing's being. But we must pursue this further by a comparison of the equation itself with other Aristotelian usages.

Axiomatic as the sentence sounds ("To de zên tois zôsi to einai estin"), its elements are not at all striking or out of the ordinary in Aristotle's diction. Compounding the infinitive "to be"—made into a verbal noun by the addition of the definite article—with a possessive dative is a regular usage with him. Although the composition is effected here through the copula ("Living for living things is being"), it appears many times as an independent phrase in a form which would demand as its analogue here *to tois zôsi einai* ("Living is the being of living things"). The meaning of this composite will become clear if we investigate its instances.

In the *Physics* act and potency are contrasted by means of the example of bronze. There is a difference in "the being of" things actual and things potential, and this is explained as a difference of definition. "For the being of bronze and the being of some potency are not the same. If they were identical without qualification, i.e. in definition, the fulfilment of bronze as bronze *would* have been

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motion.”³ “Bronze” and “potency” are possessive datives: “Ou gar tauton chalkôî einai kai dunamei tini”. This text would lead us to identify “the being of bronze” with “the definition of bronze” and with “bronze as bronze.” Can we actually carry out such an identification?

This contrast of two instances of being, explained as a nonidentity of definition, recalls another text where the indivisible instant of time is said both to divide and to unite the parts of time, while these two functions are not the same “in regard to being”—the infinitive as a noun in the accusative of respect.⁴ The implication is that although the subject of the acts, the thing that performs them and underlies

³*Physics*, III, 1, 201a31-33. For the Greek text see *Aristotelis Physica*, ed. W. D. Ross (Oxford, 1950). The Oxford translation here and at *Metaphysics*, K, 9, 1065b25—“For it is not the same thing to be bronze and to be a certain potency”—makes excellent English at the cost of the technicalities that might be involved. In general, rather than use the English infinitive at this cost, I prefer “being,” which, with an adjective or definite article, is unmistakably a verbal noun, thus answering to *einai*: “the being of bronze,” “their being.” This allows literal translation of possessives by possessives rather than by predicate nominatives, preserving the expressive and perhaps pointed crudity of Aristotle’s usage.

⁴“So the ‘now’ also is in one way a potential dividing of time, in another the termination of both parts, and their unity. And the dividing and the uniting are the same thing and in the same reference, but in essence (*to einai*) they are not the same” (*Phys.*, IV, 13, 222a17-19). The formal connotation of “being” is well brought out by the trans.

⁵“Being an animal is predicated of being a man—since it is true that in all instances to be human is to be animal, just as it is true that every man is an animal—but not as identical with being man” (*Posterior Analytics*, 4, 91b4-7).

⁶“For ‘to be infinite’ and ‘the infinite’ (*to gar apeirôî einai kai apeiron*) are the same, if it is a substance and not predicated of a subject” (*Phys.*, III, 5,

204a23, repeated at *Metaphys.*, K, 10, 1066b13).

⁷“But only the parts of the form are parts of the formula, and the formula is of the universal; for ‘being a circle’ (*to kuklôî einai*) is the same as the circle, and ‘being a soul’ (*to psuchêî einai*) the same as the soul. But when we come to the concrete thing, e.g. *this* circle, i.e. one of the individual circles, whether perceptible or intelligible (I mean by intelligible circles the mathematical, and by perceptible circles those of bronze and wood)—of these there is no definition, but they are known by the aid of intuitive thinking or of perception” (*Metaphys.*, Z, 10, 1036a1-6). For the Greek text see *Aristotelis Metaphysica*, ed. W. Jaeger (Oxford, 1957).

⁸“For when we state the essential nature (*to ti ên einai*) of the sphere or circle we do not include in the formula gold or bronze, because they do not belong to the essence (*ousia*), but if we are speaking of the copper or gold sphere we do include them. We still make the distinction even if we cannot conceive or apprehend any other example beside the particular thing. This may, of course, sometimes be the case: it might be, for instance, that only one circle could be found; yet none the less the difference will remain between the being of circle (*to kuklôî einai*) and of this particular circle, the one being form (*eidos*), the other form in matter, i.e. a particular thing” (*De Caelo*, I, 9, 278a 8-11).

them, is the same—although there is a material identity between them, we might say—there is a formal difference. The presence of the “now” has two effects different in nature, in fact again differing formally as the actual and the potential.

In many cases, Aristotle does use “the being of a thing,” as expressed by the possessive dative phrase, in such a way as to identify it either explicitly or implicitly with the thing as expressed by its own name. But in each case significant reservations are made. For instance, sentences predicating “the being of one thing” of “the being of another” say the same thing as sentences with the simple names of the things. They can be interchanged—but not their terms.⁵ The simple predicate “animal” cannot be identified with “the being of man.” Now, “animal” is an indeterminate genus. It would seem that “the being of a thing” is restricted to expressing the species in which it subsists, taken in abstraction from the thing itself. This precludes predicating of it only the indefinite genus. In another case, an explicit identity holds between a thing and its being (again expressed by the composite phrase)—but only if we take the name of the thing to denote a substance and not an accident, say, in the category of quantity.⁶ Finally, the same identity depends on our taking the name of the thing to mean its universal definition and not a given particular thing. “Circle” is the being of circle if we do not mean by it this or that circle.⁷ The being of circle then becomes perfectly equivalent with “circle” as a universal: circle as circle, circle as such.

All these meanings of being—the species as opposed to the genus in a logical context, substance as opposed to the other categories in a physical context, the universal as opposed to the particular in a metaphysical context—come down to the same thing. To state the being of a thing is to say what that thing is. The being of a thing is to be something, precisely that thing which it is. We call this the essence, the definable nature of the thing.

On the other hand, there are texts using the very same example of the circle which introduce a rather different sort of qualification: the being of a thing, as expressed by the usual phrase, is equated outright with the form.⁸ The being of circle is distinguished from circle

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precisely as the form is distinguished from a composite of matter with that form. Although an opposition of universal and particular is implied, it is not the central point here, which is that the distinction of form and composite intervenes between a thing and its being. It would seem from this that our compound phrase is merely a way of giving an instance of a certain kind of formal cause. *To einai* with the dative contracts the general Aristotelian term for formal cause, *to ti ên einai*,⁹ to the form of a given thing.

If this is the case, then we can no longer identify a thing and its being, as in the previous texts. Thrown into relief against being as form, the name of a thing can only denote the sensible composite, which must then be sharply distinguished from its being, since the sensible composite is not at all its own form.

Since we can distinguish between a spatial magnitude and what it is to be such (*to megethei einai*), and between water and what it is to be water (*hudati einai*), and so in many other cases (though not in all; for in certain cases the thing and its form are identical), flesh and what it is to be flesh (*to sarki einai*) are discriminated either by different faculties, or by the same faculty in two different states: for flesh necessarily involves matter and is like what is snub-nosed, a this in a this.¹⁰

⁹Cf., for example, *Metaphys.*, A, 3, 983a27, and Z, H, *passim*.

¹⁰*De An.*, III, 4, 429b10-14. The exception refers to separate forms, and hence would ordinarily be irrelevant in a physical treatise. However it must be mentioned parenthetically here because of problems peculiar to the soul: *De An.*, I, 1, 403a5-12, 28-29; *Metaphys.*, E, 1, 1026a5-6.

¹¹*De An.*, III, 4, 429b18-20. Again the translation is much ampler than the Greek text, but with no damage and indeed a few helpful hints.

¹²As St. Thomas points out, *De Ente et Essentia*, cap. 1; ed. Roland-Gosselin, pp. 3-4.

¹³"First then this at least is obviously true, that the word 'be' or 'not be' (*to einai ê mê einai*) has a definite meaning, so that not everything will be 'so and not so.' Again, if 'man' has one meaning, let this be 'two-footed

animal'. By having one meaning I understand this: if man is *this* (*ei tout' estin anthrôpos*), and if something should be a man (*an ei ti anthrôpos*), then this will be the being of a man (*tout' estai to anthrôpoi einai*)" (*Metaphys.*, Γ, 4, 1006a29-33). I have departed from the translation at 11. 32-33 in the interest of preserving the simplicity of the Greek.

¹⁴"Now if 'man' and 'not-man' mean nothing different, obviously 'not being a man' (*to mê einai anthrôpoi*) will mean nothing different from 'being a man;' so that 'being a man' (*to anthrôpoi einai*) will be 'not being a man;' for they will be one. For being one means this—being related as 'raiment' and 'dress' are, if their definition is one. And if 'being a man' and 'being a not-man' are to be one, they must mean one thing" (*ibid.*, b22-27).

Here "the being of a thing" is set off from the name of that thing. The Oxford translation well brings out its reference to the formal cause by giving it an equivalent ("what it is to be such") actually more apt to English the *ti ên einai*. The identification of being and formal cause is made explicit in the continuation of this passage.

Again in the case of abstract objects what is straight is analogous to what is snub-nosed; for it necessarily implies a continuum as its matter; its constitutive essence (*to ti ên einai*) is different, if we may distinguish between straightness (*to euthei einai*) and what is straight (*to euthu*).¹¹

Is there any contradiction between these two meanings of "the being of a thing"? The same ambiguity is involved in the English "essence" or the Latin *essentia*. This term can refer either to what a thing is—as expressed in the definition, which is given the same name as the thing—or to the formal principle which makes it be what it is. The latter sense corresponds to Aristotle's form or formal cause¹² and is well qualified "constitutive" essence as causing the thing to have a certain nature. Only this ambiguity justifies the use of "essence" to translate Aristotle's *to ti ên einai*. In that sense, it takes the abstract form, not "man" but "humanity," not "the straight" but "straightness," not "circle" but "circularity;" just as Aristotle's phrase "what-being-is" can be regarded as an abstract form of *einai*, something like "beingness."

III. BEING, ESSENCE, AND FORM IN THE "METAPHYSICS"

An investigation of the relation between being and form in a few salient texts of the *Metaphysics* will clarify this situation and indicate the very reason within Aristotle for the ambiguity of the expression "the being of a thing." The dialectical defense of the first principle of demonstration makes it evident that he is still consistently thinking of being as essence. Being has definite content; "to be" means "to be so." Being means to have predicates; the verb itself functions only as a copula. The definition of "man," what a man is, corresponds perfectly to "the being of man."¹³ Hence the identification of the compound phrase with the name of the thing as signifying its essence runs all through this passage.¹⁴ The being of things depends upon the

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predicates that follow the verb "is;" it depends on what they are. If they are one in definition, they are one in being. "Man" and "the being of man" are perfectly equivalent if the former signifies the nature common to all men.

And yet those who do away with this definite content for being, being as whatness or essence, are said later on to be doing away with the formal cause. Those who disregard being as essence disregard the "what-being-is." And here our compound phrase for being seems to align not with what a thing is but with the formal cause, as the translation well brings out.¹⁵ What is the connection? Why is it that the denial of being as essence involves the denial of being as form? And why can the word itself be used for both essence and form?

The answer is that form causes the being of a thing. It is the principle that puts a thing in possession of its essential predicates and hence gives it its "being."

Thus the inquiry is about the predication of one thing of another. And why are these things, i.e. bricks and stones, a house? Plainly we are seeking the cause. And this is the essence (*to ti ên einai*), to speak abstractly, which in some cases is the end, e.g. perhaps in the case of a house or a bed, and in some cases is the first mover; for this is also a cause.¹⁶

Form is more fundamental than the being (what they are) of the composite things. Or rather, as the primary *cause* of being in this first and most general sense, it is being in a more fundamental sense, whence its name, "what-being-is." It underlies the being-something

¹⁵"And is general those who say this do away with substance and essence (*ousian kai to ti ên einai*). For they must say that all attributes are accidents, and that there is no such thing as 'being essentially a man' or 'an animal' (*anthrôpoi einai ê zôioi einai*). For if there is to be any such thing as 'being essentially a man' this will not be 'being a not-man' or 'not being a man' (yet these are negations of it); for there was one thing which it meant, and this was the substance (*ousia*) of something. And denoting the substance

of a thing means that the essence of the thing (*to einai autôî*) is nothing else" (*ibid.*, 1007a20-27).

¹⁶*Metaphys.*, Z, 17, 1041a25-32. "Essence" in the translation is used in the restricted sense, as the Greek indicates: "constitutive essence," formal cause.

¹⁷*Ibid.*, b 2-9, with "being" instead of "existence" in the first line. This occasional anachronistic use of terms connoting an existential sense of being is the Oxford translation's only real fault.

or the possession of definite essences by things and hence itself more properly deserves the name of being, expressed in a precise fashion. It is "what being is for the thing" rather than "what the thing is" (being in the immediate concrete sense). "The being of a thing" will then be used to refer to a given expression of being, an essence specified by the possessive modifier—although since the form is the cause of that being in the concrete composite, the very same phrase may at times be used for the form.

Being in the sense of essence is already there and given. It is what the thing is. To ask the why of the what-is is to ask the form, which makes things be what they are.

Since we must have the being of the thing (*to einai*) as something given, clearly the question is why the matter is some definite thing (*ti estin*); e.g. why are these materials a house? Because that which was the essence of a house (*ho ên oikiaî einai*) is present. And why is this individual thing, or this body having this form, a man? Therefore what we seek is the cause, i.e. the form (*eidos*), by reason of which the matter is some definite thing (*ti estin*); and this is the substance (*ousia*) of the thing.¹⁷

This text contains a striking phrase which neatly circumvents any ambiguity in the use of the infinitive with possessive. When it comes to giving an example of a house and naming its formal cause, Aristotle uses the precise expression for being, *to ti ên einai*, modified by the possessive of "house." It is almost as though our compound phrase were here expanded into what should be its full form in its more basic meaning. The formal cause "houseness" is better called "what-being-is for a house" than "the being of a house."

Speaking of what makes flesh flesh as other than its elements and what makes a syllable a syllable as other than its letters, he continues:

But it would seem that this "other" is something, and not an element, and that it is the *cause* which makes *this* thing flesh and *that* a syllable (*aition ge tou einai todi men sarka todi de syllabên*). And similarly in all other cases. And this is the sub-

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stance (*ousia*) of each thing, for this is the primary cause of its being (*aition prôton tou einai*).¹⁸

The sentences "This is flesh" and "That is a syllable" fall right into the infinitive-accusative construction when one asks why they are true—what makes it true *that* this is flesh. Aristotle gives this infinitive a definite article, implying that the being of things is what they are, and says that the cause of this is form, not the material constituents.

In sum, "the being of a thing" ordinarily stands for what we would call essence. The cause of being in this sense is form. The latter may also be denoted as "the being of a thing," if by "a thing" we now mean the name as denoting the essence, and not an individual composite. In English, we might say that the essence of a house, what a house is, is "the being of a house;" while the formal cause that makes it to be a house, "houseness," is "the being of house (in general)."

IV. THE ARISTOTELIAN INTERPRETATION OF THE MAXIM

We are now equipped to interpret the maxim of the *De Anima*. In this context, there is a term at hand which can be given the technical sense of form, and we will not have to use the abstract expression of being to denote the formal cause of animate things. In them the

¹⁸*Ibid.*, 11. 25-27. See the previous text for the use of *ousia* to mean only form (not essence) in any context where it is being opposed to materials and elements.

¹⁹"Dicit quod hoc nomen actus, quod ponitur ad significandum endelechiam et perfectionem, scilicet formam, et alia huiusmodi, sicut sunt quaecumque operationes, veniunt maxime ex motibus quantum ad originem vocabuli. Cum enim nomina sint signa intelligibilium conceptionum, illis primo imponimus nomina, quae primo intelligimus, licet sint posteriora secundum ordinem naturae. Inter alios autem actus, maxime est nobis notus et apparens motus, qui sensibiliter a nobis videtur. Et ideo ei primo impositum fuit nomen actus, et a motu ad alia derivatum est" (St. Thomas, *In IX Metaphys.*, lect. 3; ed. Cathala, No. 1805).

²⁰"Sed alia est ratio aeris in quantum aer, et alia est ratio aeris in quantum habet aliquam potentiam. Et hoc est quod dicit quod non est idem aeri esse et alicui potentiae" (*In XI Metaphys.*, lect. 9; Cathala No. 2296). "... idem est infinito esse et infinitum, si infinitum est substantia, id est si infinitum praedicat propriam rationem ejus quod est infinitum" (*ibid.*, lect. 10; No. 2325).

²¹"Sciendum autem est, quod in omnibus sequentibus per hoc quod dicit Hoc esse, vel Huic esse, intelligit quod quid erat esse illius rei; sicut homini esse vel hominem esse, intelligit id quod pertinet ad quod quid est homo. Quod est autem musicum esse, id est hoc ipsum quod quid est musicus, non pertinet ad hoc quod quid es tu. Si enim quaeratur, tu quid sis, non potest responderi quod tu sis musicus. Et ideo sequitur quod musicum esse non

cause of being (and the primary instance of being in the living composite) is the soul. It is what actualizes and constitutes the animal or plant as alive. In short, it makes it to be what it is, a living thing. The ambiguity of being as both essence and form need not confuse us here. Being in the concrete sense, contracted by the possessive to a given thing which is such a sort of thing, need only express the essence or definable nature.

The connection between this and the infinitive "to live" is at once obvious. We need not invoke any other sense for "living" or "life" than that of operations by animate things, the sense recognized by Aristotle. The nature of a thing is the principle of its operations. Essence is known by the operations of the thing as they appear to us. Known by its acts, it can be denominated by them.¹⁹ When a thing lives, or acts with vital operations, we say it is "alive" or "animate." This is its essence or nature; so this is its being. For things which live, life is their being. If being is what-is, to say "a living thing is" is to say "a thing is alive." The soul, as the cause of life, is the cause of being in this case, whence it is form. It gives to living things their essence; it makes them to be what they are, "alive."

To all appearances, this is exactly the interpretation St. Thomas gives in his commentaries on Aristotle. In the first place, he knows full well what Aristotle's meaning for the infinitive "to be" is. He is not unaware of the notion of being delineated above. In two of the instances in the *Metaphysics* he simply parrots the usage of *einai* (*esse*) with a possessive dative.²⁰ Both these comments take it for granted that the *esse* of a thing expresses its proper *ratio*, the essence or essential content proper to it as such a thing. This is precisely how he explained Aristotle's vocabulary earlier in the same commentary, noting that the infinitive "to be" with the possessive refers to the essence or quiddity of a thing, using for this last a Latin translation of the Aristotelian technical expression for formal cause, *quod quid erat esse*. St. Thomas is concentrating, then, on the more basic and technical sense of "the being of a thing:" the formal principle, or essence as constitutive. "The being (*esse*) of man" means all that which pertains to the form of humanity. Being is entirely reduced to quiddity and based on the question what a thing is.²¹

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In his commentary on the *De Anima*, St. Thomas gives us a perfect paraphrase not only of the maxim, but of the whole body of reasoning in which it appears as one of the premises.

He proves . . . that the soul is cause of the living body as its form by two arguments, of which the first is as follows. The cause of something as its substance, that is its form, is that which is the cause of its being. For it is because of its form that each thing actually is. But the soul is the cause of being for living things; for it is because of their soul that they live, and that very living is their being (*esse*). Therefore the soul is cause of the living body as its form.²²

This is pure Aristotelianism. There is even a trace of Aristotle's use of *ousia* for form in the apposition of *substantia* and *forma*. The doctrine that form is the cause of being is repeated without qualification. There may be reason elsewhere to suspect that the Thomistic causality of being by form is different from the Aristotelian, but there is no indication of that here.²³ "Everything actually is through its form." Nothing could be simpler. Especially in the light of the other Aristotelian commentary cited above, we have no grounds for interpreting *esse* as *vivere viventium* any differently here than in Aristotle. *Esse* in this place is being as essence.

est tibi esse; quia ea quae pertinent ad quidditatem musici, sunt extra quidditatem tuam, licet musicus de te praedicetur" (*In VII Metaphys.*, lect. 3; No. 1310).

²²"Probat . . . quod anima sit causa viventis corporis, ut forma: et hoc duplici ratione: quorum prima talis est. Illud est causa alicujus ut substantia, id est, ut forma, quod est causa essendi. Nam per formam unumquodque est actu. Sed anima viventibus est causa essendi; per animam enim vivunt, et ipsum vivere est esse eorum: ergo anima est causa viventis corporis, ut forma" (*In II de An.*, lect. 7; ed. Pirotta, No. 319). The use of a bizarre Latin gerund, *essendum*, indicates nothing, for it translates *einai* just as does *esse*. All three are equivalent verbal nouns.

²³See the qualified statement of the *De Ente*, cap. 1; ed. Roland-Gosselin,

p. 10: ". . . quamvis huius esse suo modo forma sit causa" (italics mine).

²⁴"Uno modo dicitur esse ipsa quidditas vel natura rei, sicut dicitur quod definitio est oratio significans quid est esse: definitio enim quidditatem rei significat. Alio modo dicitur esse ipse actus essentiae; sicut vivere, quod est esse viventibus, est animae actus; non actus secundus, qui est operatio, sed actus primus. Tertio modo dicitur esse quod significat veritatem compositionis in propositionibus secundum quod est dicitur copula; et secundum hoc est in intellectu componente et dividente quantum ad sui complementum; sed fundatur in esse rei, quod est actus essentiae" (*In I Sent.*, d. 33, q. 1, a. 1, ad 1; ed. Mandonnet, I, 766).

²⁵"Forma, quae est actus primus, est propter suam operationem, quae est actus secundus" (*ST*, I, q. 105; a. 5; ed. Leon.)

V. THE TREATMENT OF THE MAXIM IN THE "SENTENCES"

If any deviation from the Aristotelian significance of this axiom is going to appear anywhere, it will be in the works professing to teach St. Thomas's own doctrine. In the earliest of these, the *Scriptum super Sententiis*, we find indeed a number of citations of the Aristotelian maxim. If we can obtain a consistent picture of St. Thomas's treatment of it and its concurrent implications in this early work, we can go on to later works and trace there the fate of both.

The text frequently cited in this work for the meaning of being (*esse*) makes use of the maxim to exemplify the second meaning given. The first meaning conforms perfectly well to Aristotle's *einai*.²⁴ The being of a thing is its quiddity or nature, what it is as expressed by the definition. These are all notions which Aristotle himself had linked to being (as essence). St. Thomas also uses for this a term that Aristotle had reserved for the formal cause (*quid est esse*, again the *ti ên einai*). This need not surprise us, since being was ambiguous in Aristotle too, as essence and form. *Esse*, then, can mean essence both as what the thing is and the principle which makes it be such.

The second sense is expressed in rather strange fashion. To an Aristotelian there is a notable confusion of language in these few lines. "Being (*esse*) in another way means the very act of the essence; as living, which is being for living things, is the act of the soul; not second act, which is operation, but first act." This would seem to refer to form (the usual meaning of "first act"),²⁵ but was not form somehow included in the first sense? Besides, what is the maxim doing here, rather than under the first sense? For Aristotle, *esse* definitely did not mean form in this phrase, since the form was the soul; rather, it meant the nature of living things. St. Thomas seems to mean that being is even the act of the form, *actus animae*. By itself, this could mean the act that the form causes, the actuality of the composite, as easily as some sort of act that constitutes the form. And yet soul and essences are thrown into parallel positions: both have an act called *esse*. As form constitutes essence, so something called *esse* constitutes and actualizes both form and essence. The situation is further confused by the identification of *est* as the copula in the third

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meaning of *esse*. Being as essence should then suffice for the foundation of propositions ("a thing is such-and-such"); but instead this *actus essentiae* is invoked. Form as the cause of whatness is indeed the reason why a predicate can be said of a given subject, but is this act of essence form?²⁶ Something is awry here, and only other texts can indicate why.²⁶

An earlier use of the maxim runs far more true to Aristotle. The implication leaps out that form is the cause of being because it is the cause of life in living things.²⁷ The statement that the soul causes the life and being of the body *formaliter* might lead us to qualify this; perhaps it causes being "after the manner of a form." But this is only one of many possible meanings, among them the inimical "absolutely" or "strictly speaking." This relation of soul and body St. Thomas clarifies better elsewhere by comparing it with creation.²⁸ The "presence" of the soul in the body is not like the "presence" of God in creatures. In creation being is conferred by the divine operation, but it is not the divine being; the being of a creature is its own. The being of the body, however, conferred by the soul, is the soul's own. Why is it that the soul can confer its own being on the body in this way? Because being is the "act of the form," as St. Thomas says unequivocally. Is this the act of actualizing the composite? That seems unlikely, because again being is said to be the act both of the form and the composite. A form becomes a form of matter by giving it *its* act, which then becomes *the act of both*. And this being would

²⁶We can agree with Gilson that this text alone does not allow us to conclude to an act of existing in St. Thomas, but we cannot agree that it moves "on an authentic Aristotelian plain of substantial being," wherein *esse* as *actus essentiae* is the form (*L'être et l'essence* [Paris, 1948], p. 91).

²⁷"Anima comparatur ad corpus . . . etiam ut forma; unde formaliter seipsa facit vivere corpus, secundum quod vivere dicitur esse viventium" (*In I Sent.*, d. 17, q. 1, a. 1, ad 2; ed. Mandonnet, I, 395).

²⁸"Aliquando vero substantia spiritalis dat per operationem corpori esse; non tamen suum esse, sed aliud; et hoc modo Deus est in omnibus creaturis

quibus dat esse sed non suum. Aliquando dat corpori ipsum suum esse; sed hoc contingit dupliciter: quia esse et est actus formae, et est actus hypostasis. Unde substantia spiritalis potest conferre rei corporali esse suum in quantum est actus formae, ut sic forma ipsius efficiatur; et hoc modo anima est in corpore" (*ibid.*, d. 37, q. 3, a. 1, sol.; I, 871).

²⁹" . . . essentia dicitur cujus actus est esse . . . Hoc autem dicitur dupliciter . . . Esse enim est actus alicujus ut quod est, sicut calefacere est actus calefacientis; et est alicujus ut quo est, scilicet quo denominatur esse, sicut calefacere est actus caloris" (*ibid.*, d. 23, q. 1, a. 1, sol.; I, 555).

seem to be conferred absolutely only by God and relatively by the form. This is not in the Aristotelian terms of being *as* form giving being to the composite but *the* being of form giving being to the composite through the form.

Perhaps some light may be cast on the meaning of this last notion by a comparison with some noteworthy texts in the *Sentences* where St. Thomas uses close analogues of the Aristotelian maxim to explain what he means by *esse*.

Essence means that whose act is to be . . . But this has a twofold sense . . . For to be is the act of something, both as the thing that is, as to heat is the act of *what heats*, and also as the principle by which it is, that is by which its being (*esse*) is named, as to heat is the act of *heat*.²⁹

The divergence from Aristotle is unmistakable here. "To heat" is the act of "a heater," just as to live is the act of the living. In parallel with this, being or to be is the act of essence. But that is not all. It is compared to heating as also the act of heat. It is the act of anything that is, whether that be substance or a principle of substance. For Aristotle the act of a thing was its formal principle. The very being (*to ti ên einai*) of "a heater" was "heat," "hotness" itself. For St. Thomas, however, this act has its further act of being. Being is given a very dynamic sense by his consistent comparison of it with operation, even when faced with the actuality of form. It is an act even beyond form, although for a reason yet unclear it can be denominated in terms of form.

It would seem that the analogue of operation comes to St. Thomas's mind wherever he is called on to delineate the relation between essence and being.

To be means that which belongs to the nature of a thing, and according to which it is distributed in the ten genera. And this being is indeed in the thing, and is an act resulting from the principles of the thing, as to illuminate is the act of what illumines. Nevertheless at times to be is taken for the essence according to which a thing is, since it is by the acts that their

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principles are customarily designated, as the potency or capacity for them.³⁰

This is paradoxical. *Esse* in the first sense here given clearly is not essence, for that is its second sense. It is still an act of the essence, to which the latter is related as a potency or capacity is related to the corresponding operation. And yet it so intimately belongs to the essence that by it a thing can be located in the categories. Is it then "colored" by the essence? Even more, it is caused by the essence as its principle; it is a result of the essential constituents of the thing. This at least means that essence specifies being to a definite sort of being. Since to be is made so unequivocally verbal by this constant comparison with operations, perhaps it would be better to speak of essence specifying it to a definite *manner* of being—an adverbial "how" rather than a kind or class.

In any case, these classifications of the meaning of being make it clear that whether essence means substance or formal cause, it is still subject to an act of being beyond it. This act is not the essence itself in either of its senses. That is why, when St. Thomas says *esse essentiae*, he does not mean essential being, in the sense of the being that the essence is in its own right (descriptive genitive), or even form but simply the being of an essence by which it is made actually to be (possessive genitive). When on his own he feels not at all compelled to use *esse* in any way parallel to Aristotle.³¹ His willingness to recognize a sense of *esse* as essence in most of the texts above stemmed from their connection with a reference to a passage in the *Metaphysics* defining the senses of being.

Given that being resembles operations in being caused by the essence—or better yet, caused by the essence as they are by their

³⁰"Alio modo dicitur esse quod pertinet ad naturam rei, secundum quod dividitur secundum decem genera. Et hoc quidem esse in re est, et est actus resultans ex principiis rei, sicut lucere est actus lucentis. Aliquando tamen esse sumitur pro essentia secundum quam res est; quia per actus consueverunt significari eorum principia, ut potentia vel habitus" (*In III Sent.*, d. 6, q. 2, a. 2, resp.; ed. Moos, p. 238).

³¹See, for example, *ibid.*, ad 2m.

³²"Vita dicitur dupliciter. Uno enim modo vita idem est quod esse viventis, ut in II De Anima dicitur, quod vivere viventibus est esse; et hoc modo vita hominis relinquitur ex conjunctione animae ad corpus . . . Alio modo dicitur vita operatio rei viventis" (*In II Sent.*, d. 38, q. 1, a. 2, ad 3m; II, 972).

³³"Vivere uno modo dicitur esse viventis. Et hoc modo vivere non est per potentias, sed per essetiam animae" (*In III Sent.*, d. 33, q. 2, a. 4, sol. 1, ad 3; p. 1062).

faculties—we must realize that the parallel is not complete. For some reason having to do with the peculiar characteristics of being, it can only be called an “act” in an equivocal sense, not implying the notion of activity. However, only in an offhand way do we find this expressed in the *Sentences*, as a distinction intervening between *vita* or *vivere* in the ordinary sense of vital operations and in the sense in which it is used in the Aristotelian maxim.³² (This in spite of the fact that the latter is described as though it were merely a denomination of the essence of the thing and constituted at once by the conjunction of the essential principles, body and soul.) This is strange indeed, for no such distinction was stated or required by Aristotle, who habitually denoted essences by their characteristic operations. But again it is the *esse* of the living thing that is at stake, and we have seen the ambiguities this has in the *Sentences*. If this act is not operation or the essence (even as form) but the act of the essence already described, we will need indeed a novel technical sense of “life” to cover it. That such is the case is clear in another text giving the same distinction.³³ *Vivere* as *esse* in the maxim is not the operations exercised through the powers of the soul, not even if those stand for the essence. It is an act exercised *through* the essence of the soul, just as vital operations are exercised through its faculties. Essence again is to being as faculties to operations, at least a specifying principle.

There are elements in this complex of early doctrines that clearly mark St. Thomas as infusing a new meaning into Aristotle’s maxim. But they are indistinct and unorganized. Things are stated in a way that confuses a demanding modern reader. The language is rough and imprecise where it expresses the new contributions, and seems at other times bent into conflicting terms to avoid the appearance of departure from Aristotle. Many questions are occasioned by these texts. What does “first act” mean for St. Thomas? Can this description be applied exclusively to the form or only to the form in a specialized sense as a principle of actions (the other acts)? What is the meaning of the statement that the life of man follows on the conjunction of soul and body, particularly if that be life as being or “the act of the essence”? And why is it necessary to distinguish a twofold technical

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sense of "life"? Can this be applied to the other activities here given, "lighting" and "heating"?

VI. THE INTERPRETATION OF THE MAXIM IN THE LATER WORKS

The chief point which we must investigate, which is involved in all these questions, is the relation of essence, form, and being as it operates in the background of the maxim when it is used in the later works. The least we can expect from St. Thomas here is an increase in precision and clarity of language, so that his own proper doctrine will stand out independent of the modes of expression of his authorities.

The first thing to realize is that Aristotle continues to survive intact. The maxim is taken whole into St. Thomas's teaching, along with the implication that form is the cause or "principle" of being.³⁴ But on these very occasions, St. Thomas sometimes manifests discontent with the analogy of faculties and operations. "To be is related to form as an immediate consequence following upon it: but not as an effect is related to the power of an agent, say motion to the power of a mover."³⁵ It would seem to be precisely the element of agent causality

³⁴"Principium enim vitae in omnibus viventibus est forma substantialis: 'vivere enim est esse viventibus,' ut Philosophus dicit in II De Anima" (CG, III, cap. 104; ed. Leon., No. 8). ". . . anima dicitur forma corporis in quantum est causa vitae, sicut forma est principium essendi; vivere enim viventibus est esse, ut dicit Philosophus in II De Anima" (De An., a. 14, ad 8; ed. Mandonnet, *Quaest. Disp.*, III, 167).

³⁵". . . esse comparatur ad formam sicut per se consequens ipsam; non autem sicut effectus ad virtutem agentis, ut puta motus ad virtutem moventis." *Ibid.*, ad 4m, p. 166.

³⁶"Sed ulterius posuit Plato quod anima humana non solum per se subsisteret, sed quod etiam haberet in se completam naturam speciei. Ponebat enim totam naturam speciei in anima esse, dicens hominem non esse aliquid compositum ex anima et corpore, sed animam corpori advenientem; ut sit comparatio animae ad corpus sicut nau-tae ad navem, vel sicut induti ad ves-

tem. Sed haec opinio stare non potest. Manifestum est enim id quo vivit corpus animam esse, vivere autem est esse viventium: anima igitur est quo corpus humanum habet esse actu. Huiusmodi autem forma est. Est igitur anima humana corporis forma" (De An., a. 1; III, 94). "Quod autem ut forma propria anima corpori uniatur, sic probatur. Illud quo aliquid fit de potentia ente actu ens, est forma et actus ipsius. Corpus autem per animam fit actu ens de potentia existente: vivere enim est esse viventis . . . Est igitur anima forma corporis animati" (CG, II, cap. 57, under the heading "Positio Platonis de unione animae intellectualis ad corpus").

³⁷"Vivere autem viventium est ipsum esse eorum . . . cum enim ex hoc animal dicatur vivens quod animam habet, secundum quam habet esse, utpote secundum propriam formam, oportet quod vivere nihil sit aliud quam tale esse ex tali forma proveniens" (CG, I, cap. 98).

implied that makes this analogy unsatisfactory. Is it that St. Thomas means to allow the form to wreak on its being only some sort of formal causality or specification?

In many cases, the maxim proves as it does in Aristotle that the soul is the form of the body. These passages usually follow, as would be expected, a citation and discussion of the "Platonic position" that man is the soul and that the unity of soul and body is only accidental. The maxim is used in conjunction with the statement that form is the *quo*, or principle through which, matter (such as the human body) has actual being (*esse actu*) or becomes an actual rather than simply potential being (*actu ens*).³⁶ Aristotle's argumentation seems to be reproduced in its entirety.

From the easy and offhand uses of the maxim like this, no one would think at first that the doctrine was non-Aristotelian. But it is noteworthy that here the causality of being by the form is described only in regard to the matter; nothing is said one way or another about the composite. When it comes to speaking of the whole living animal, St. Thomas makes it clear that the justification for his notion that form causes being is different from that of Aristotle. The act that we have seen to be an act just as much of form as of essence is not unreservedly caused by form.

The life of living things is their very being . . . for since an animal is said to be alive because it has a soul, according to which it has being (since this means according to its proper form), living must be nothing else than this sort of being (*tale esse*) flowing out of this sort of form.³⁷

A thing has the nature "living," is defined as "alive," because it has a form which is a soul. This form causes the thing to be what it is, and therefore the thing is said to be according to its form—after a manner fixed by its form. A form which is of a given sort makes a thing have that sort of being. Life is being as it comes under the influence of a vital form.

Being is determined to be of a specific sort not only by form or essence in the strict sense, but also by essence in the broad sense (nature).

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Nothing can be added to being (*esse*) which might be outside it, since nothing is outside it but non-being (*non ens*), which can neither be form nor matter. Therefore to be is not made determinate by something else as potency is by act, but more as act is by potency. For even in the definition of forms their proper matters are put in the place of the specific difference, as for example when we say that the soul is the act of a physical organic body. And in this way is one being (*esse*) distinguished from another, inasmuch as it is the being of one or another nature.³⁸

This "being" definitely is not therefore what the thing is. It is an act relative to which nothing can be called an act, since it contains all perfection, and nothing new is extrinsic to it. It is limited by the potency it realizes. Hence we can define it the same way we define forms and set them off from one another, by pointing to the matter which they actualize, "act of such-and-such matter." In itself unlimited and undifferentiated,³⁹ being can be defined as of one or

³⁸"Nihil autem potest addi ad esse quod sit extraneum ab ipso, cum ab eo nihil sit extraneum nisi non ens, quod non potest esse nec forma nec materia. Unde non sic determinatur esse per aliud sicut potentia per actum, sed magis sicut actus per potentiam. Nam et in definitione formarum ponuntur propriae materiae loco differentiae, sicut cum dicitur quod anima est actus corporis physici organici. Et per hunc modum hoc esse ab illo esse distinguitur, in quantum est talis vel talis naturae" (*De Pot.*, q. 7, a. 2 ad 9; II, 254).

³⁹"Esse autem, in quantum est esse, non potest esse diversum: potest autem diversificari per aliquid quod est praeter esse" (*CG*, II, cap. 52).

⁴⁰"... hoc quod dico esse est inter omnia perfectissimum: quod ex hoc patet quia actus est semper perfectior potentia. Quaelibet autem forma signata non intelligitur in actu nisi per hoc quod esse ponitur. Nam humanitas vel igneitas potest considerari ut in potentia materiae existens, vel ut in vir-

tute agentis, aut etiam ut in intellectu: sed hoc quod habet esse, efficitur actu existens. Unde patet quod hoc quod dico esse est actualitas omnium actuum et propter hoc est perfectio omnium perfectionum" (*De Pot.*, q. 7, a. 2, ad 9; II, 254).

⁴¹"... secundum Dionysium . . . aliter est in participationibus et in participantibus. Participationes enim quanto sunt simpliciores, tanto nobiliores, sicut esse quam vivere, et vivere quam intelligere, ut fiat comparatio inter esse et vivere, separato per intellectum esse a vivere" (*De Ver.*, q. 20, a. 2, ad 3; I, 494). "Et per hoc dicit Dionysius quod licet viventia sint nobiliora quam existientia, tamen esse est nobilius quam vivere" (*De Pot.*, q. 7, a. 2 ad 9; II, 254).

⁴²"Omne autem aliud esse quod non est subsistens, oportet quod individuetur per naturam et substantiam quae in tali esse subsistit. Et in eis verum est quod esse hujus est aliud ab esse illius per hoc quod est alterius naturae" (*ibid.*, ad 5m; II, 253).

another sort by what it makes to be, "act of such-and-such a thing or nature." Life, then, is the being of a living nature.

The reason for all this is of course St. Thomas's notion of being as taken in itself. *Esse* is "the most perfect of all things," indeed the root of all the perfections in a thing; in other words, "the actuality of all acts." Why? Because no form whatever can be said to be in act "except through this, that it be said *to be*." It can be regarded in several considerations, but none of these finds it "actually existent"—which is brought about only by the fact that it has *esse*.⁴⁰ Clearly, being is act prior to the form, on which the form depends for its entire actuality, even as a form. That is why in itself being is more perfect than in any of its qualified manifestations. St. Thomas emphasizes that this consideration of the act of being apart from any qualification requires forming an abstraction of the act (his interpretation for the Neoplatonic materials he uses).⁴¹ Only when *esse* is separated from *vivere* by the intellect can it be regarded as more perfect. All we ordinarily know are things that are; and in these being is made specific, definite, limited, individual (generally distinct from other ways of being) by the nature, indeed by the whole substance.

Every other being (*esse*) which is not subsistent must be individuated by the nature and by the substance which subsists in that sort of being (*esse*). And in them it is true that the being of one thing is different from the being of another because it is the being of another nature.⁴²

This can cast some light on the meaning of form as first act. If being is the act that grounds every actuality in a thing, form can be first act only in a relative sense. But there are various orders to consider. First, if "act" has the sense of action alone, then every principle of action perfected by it can be called a potency, be that a faculty or even the essence itself. And yet this whole order or genus of action is related to form as a secondary sort of act. As the principle that makes its matter to be and enables its proper operations, form stands against them as the source of the realization of the composite. In this context, "first act" in a living thing is not so much *vivere* (as was said in the *Sentences*) but *vivificare*, what the soul does to the

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body as form to matter.⁴³ It is first act relative to matter and operations, which it constitutes as living, passing on to them the life (the sort of being) that it has. And yet, compared to its own being, it can hardly be called act but must again be thrown into the position of potency relative to the act of all acts. This is often described as a twofold relation of act and potency in composite things.⁴⁴

Nevertheless, St. Thomas has never used the analogue of matter and form for essence and being except on the question of definition, no doubt because in such a proportion all the dynamism implied in the act of being would be lost. There is one reason why it might almost serve better than the analogue of faculty and operation, though, the same reason why the latter keeps breaking down. That is because in the case of essence and being the two are inseparable, or only separable by the intellect, as we saw above; while a faculty and its act are separable. Not only does the order of action imply too much of efficient causality but also the condition of having a power without always acting. An agent can be an *agent* without *acting*. Nothing, however, can be a *thing* without first of all (and most important in its constitution) *being*. Being belongs to a nature even if it is to be a nature. And so being and essence can be spoken of indifferently

⁴³" . . . omne illud quod est principium actionis, ut quo agitur, habet potentiae rationem; sive sit essentia, sive aliquod accidens medium, puta qualitas quaedam inter essentiam et actionem . . . Quia vero anima vivificat corpus, est per essentiam animae. Sed vivificare, licet per modum actionis dicatur, non tamen est in genere actionis, cum sit actus primus magis quam secundus" (*Ibid.*, 2, 1, ad 6m; II, 25-26).

⁴⁴"Unde in rebus compositis est considerare duplicem actum, et duplicem potentiam. Nam primo quidem materia est ut potentia respectu formae, et forma est actus ejus; et iterum natura constituta ex materia et forma est ut potentia respectu ipsius esse, in quantum est susceptiva ejus. Remoto igitur fundamento materiae, si remaneat aliqua forma determinatae naturae per se subsistens, non in materia, adhuc comparabitur ad suum esse ut potentia ad actum: *non dico autem ut potentiam separabile ab actu, sed quam semper*

suus actus comitetur" (*De Spir. Creat.*, a. 1; III, 28 [italics mine]).

⁴⁵"Manifestum est enim quod id quod secundum se convenit alicui, est inseparabile ab ipso. Esse autem per se convenit formae, quae est actus. Unde materia secundum hoc acquirit esse in actu, quod acquirit formam: secundum hoc autem accidit in ea corruptio, quod separatur ab ea. Impossibile est autem quod forma separetur a seipsa. Unde impossibile est quod forma subsistens desinat esse" (*ST*, I, q. 75, a. 6).

⁴⁶" . . . duplex est principium vitae corporalis. Unum quidem effectivum. Et hoc modo Verbum Dei est principium omnis vitae. Alio modo est aliquid principium vitae formaliter. Cum enim vivere viventibus est esse . . . sicut unumquodque formaliter est per suam formam, ita corpus vivit per animam. Et hoc modo non potuit corpus vivere per Verbum, quod non potest esse corporis forma" (*ibid.*, III, q. 2, a. 5 ad 3).

when specifying a type of thing, since being is never found without the principle of its specification. Essence is "a potency which its act always accompanies."

This is why the life of man, even when taken to mean his very being, can still be regarded as being constituted by the conjunction of soul and body. This does not mean, except secondarily, that his essence is thereby constituted. The soul is regarded as already possessed of its being (in the order of causality) when it "comes to" the body (this cannot be understood in a temporal sense), since form and being are inseparable. Man, then, is truly made *to be* by this composition, since one of the elements necessarily brings being with it. Only incidentally is he thereby made *to be man*, having human nature.

It is obvious that that which essentially (*per se*) belongs to something is inseparable from it. But to be essentially (*per se*) belongs to form, which is act. Therefore matter receives being in act insofar as it receives form; while corruption takes place in it insofar as it is separated from form. But it is impossible that form be separated from itself. Hence it is impossible that a subsistent form should cease to be.⁴⁵

No language could be stronger. "Form is act" means that the bond between form and being is so strong that a subsistent form can no more be separated from being than it can from itself. Form essentially is.

This uniquely Thomistic interpretation of Aristotle's doctrine that form is the cause of being to the composite is expressly stated in conjunction with the maxim of the *De Anima* at one point. Life has a twofold causality exerted upon it. It has both an "effective" and a "formal" principle. When we mean by it the very being of living things, the soul only causes it "formally" (*formaliter*). Form does not make a living thing be absolutely, but only makes it be alive. The cause of being in the order of efficiency, what purely and simply makes a thing to be, is the creative Word of God.⁴⁶

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A point of doctrine which St. Thomas himself seems to develop more and more consciously in the course of his career has yet to be made clear; namely, the technical sense of "life" as used to mean the act of being in his version of Aristotle's maxim. The clearest statement of this teaching is found in the *Summa*, under an article entitled "whether life is a kind of operation."⁴⁷ The treatment sets out as its background a doctrine we have already seen him draw from Aristotle while commenting on the *Metaphysics*. In the ordinary mode of knowing, sensible properties lead us to knowledge of the quiddities of things. "It is from these accidents which outwardly appear about a thing that we come to know its essence." Thus a name taken from an operation can with no trouble be transferred to signify the nature of the substance that so operates. "Life" ordinarily means self-motion, which is a superficial property of a thing, apparent to us precisely because it is "on the surface." Meaning immanent activity, it is transferred to the substance of those things which operate immanently.

⁴⁷"Intellectus noster, qui proprie est cognoscitivus quidditatis rei ut proprii obiecti, accipit a sensu, cuius propria obiecta sunt accidentia exteriora. Et inde est quod ex his quae exterius apparent de re, devenimus ad cognoscendam essentiam rei. Et quia sic nominamus aliquid sicut cognoscimus illud, . . . inde est quod plerumque a proprietatibus exterioribus imponuntur nomina ad significandas essentias rerum . . . Sic ergo dicendum est de vita. Nam vitae nomen sumitur ex quodam exterius apparenti circa rem, quod est movere seipsum: non tamen est impositum hoc nomen ad hoc significandum, sed ad significandam substantiam cui convenit secundum suam naturam movere seipsam, vel agere se quocumque modo ad operationem. Et secundum hoc, vivere nihil aliud est quam esse in tali natura . . . Quandoque tamen vita sumitur minus proprie pro operationibus vitae, a quibus nomen vitae assumitur" (*ibid.*, I, q. 18, a. 2).

⁴⁸"Illud enim *proprie* vivere dicimus quod in se ipso habet motus vel operationes quascumque: ex hoc enim sunt

dicta *primo* aliqua vivere, quia visa sunt in se ipsis habere aliquid ea movens secundum quancumque motum; et hinc processit nomen vitae ad omnia quae in se ipsis habent operationis propriae principium . . . Illud ergo esse quod habet res prout est movens seipsam ad operationem aliquam, dicitur *proprie* vita rei, quia vivere viventis est esse" (*De Ver.*, q. 4, a. 8; I, 116 [*italics mine*]).

⁴⁹"Sciendum est autem, quod reductio aliorum modorum ad unum primum, fieri potest dupliciter. Uno modo secundum ordinem rerum. Alio modo secundum ordinem, qui attenditur quantum ad nominis impositionem. Nomina enim imponuntur a nobis secundum quod nos intelligimus, quia nomina sunt intellectuum signa. Intelligimus autem quandoque priora ex posterioribus. Unde aliquid per prius apud nos sortitur nomen, cui res nominis per posterius convenit" (*In V Metaphys.*, lect. 5; Cathala No. 824).

⁵⁰" . . . Philosophus ibi accipit vivere pro operatione vitae" (*ST*, I, q. 18, a. 2 ad 1).

Now, as we saw above, being as the act of all acts can be defined only by giving the form or nature of the thing that is. As pure perfection, it escapes definition in itself. So St. Thomas here refers *vivere* to substance and then to "being in such a nature" (*esse in tali natura*). The intimate relation of being and the nature which is merely a way of being allows us to transfer any denomination of substance one step further to denote the act of being made to be of such a sort by that substance. This order of causes within things is so real that the *proper* sense of life is being or to be. "Nevertheless, sometimes life is taken less properly to mean the operations of life, from which the name was derived."

The same doctrine is developed in the *De Veritate*.⁴⁸ The visible behavior of certain things is what we first call life. But since the ultimate cause of this is the being of a living thing, qualified by its form, the name of "life" is applied to this cause. This name stands successively for operations involving immanence (the "first" sense), then the things so operating, and finally their being (*esse*). Both the first and the last senses are called "proper" here. How can this be said and how can the sense of operation be called "first"? There are two orders to deal with here, that of our imposition of names (in the order of knowledge) and that of real causality, which is the exact reverse. We give to the thing we know earliest a name which in fact should apply to the causes that constitute it as it is and make it able to bear that very name. But these we only know later.⁴⁹ And so wherever it is a question of terms and the order of knowledge, life is properly operation; but where reality and the order of real causality are at stake, life is properly being.

Given this distinction, St. Thomas has no trouble handling an objection that life means only operation, based on Aristotle's own text to that effect in the *De Anima*, which we have seen above: "The Philosopher there takes *living* to mean the operation of life."⁵⁰ The question that arises for us is this: If Aristotle felt not at all compelled to belabor a distinction of two senses of "life," why does St. Thomas go to such lengths on the occasion of using his maxim? The transfer of the name from operations to nature takes place with great ease in Aristotle. Should not the same ease characterize its transfer thence

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to being in St. Thomas? No doubt it does; but the appearance of ease is dangerous when so great a leap is made to the very act of being. St. Thomas seems fearful that the appearance will mislead. Unless a student is made aware of the distinctions that underly it, the whole doctrine of being will be prejudiced.

He is concerned to maintain that "the action of an angel or of any creature is not its being (*esse*)," for the simple reason that immanent action has a certain aspect of infinity about it. Were it to merge with the being of a thing, the finitude of created being would be lost.⁵¹ The same is true even of substance. Were any of the perfections of substance in the line of activity to merge with created substances, they would be their own actuality.⁵² To allow any of the modifications of the being of a thing to identify with it is to eradicate them entirely in the all-perfection of being-in-itself (after the manner of Parmenides). If anything that is is its own act of being, if actions are their own being, even their own substance (insofar as that necessarily involves "to be"), they are *is* in all its fulness and can no longer be limitations of *is*. As such, they cease to be.

⁵¹"... actio angeli non est eius esse, neque actio alicuius creaturae . . . Alia vero actio est quae non transit in rem exteriorem, sed manet in ipso agente . . . Secunda autem actio de sui ratione habet infinitatem . . . Esse autem cuiuslibet creaturae est determinatum ad unum secundum genus et speciem: esse autem solius Dei est simpliciter infinitum" (*ibid.*, q. 54, a. 2).

⁵²"... impossibile est quod actio angeli, vel cuiuscumque alterius creaturae, sit eius substantia. Actio enim est proprie actualitas virtutis; sicut esse est actualitas substantiae vel essentiae. Impossibile est autem quod aliquid quod non est purus actus, sed aliquid habet de potentia admixtum, sit sua actualitas: quia actualitas potentialitati repugnat. Solus autem Deus est actus purus. Unde in solo Deo sua substantia est suum esse et suum agere" (*ibid.*, a. 1). Note that the dynamism of being is again brought out by comparing with operation its function as act with regard to essence.

⁵³"Vivere enim viventibus est esse, ut dicitur in II *De Anima*. Sed intelligere

est quoddam vivere, ut in eodem dicitur. Ergo intelligere angeli est eius esse" (*ibid.*, 2, obj. 1). "... vivere quandoque sumitur pro ipso esse viventis: quandoque vero pro operatione vitae, idest per quam demonstratur aliquid esse vivens. Et hoc modo Philosophus dicit quod intelligere est vivere quoddam: ibi enim distinguit diversos gradus viventium secundum diversa opera vitae" (*ibid.*, ad 1).

⁵⁴"In nobis autem nulla operatio ad quam nos movemur, est esse nostrum; unde intelligere nostrum non est vita nostra, proprie loquendo, nisi secundum quod vivere accipitur pro opere, quod est signum vitae. . . Sed intelligere Verbi est suum esse" (*De Ver.*, q. 4, a. 8; I, 116 [cf. n. 48 above]).

⁵⁵"Tunc enim solum immediatum principium operationis est ipsa essentia rei operantis, quando ipsa operatio est eius esse: sicut enim potentia se habet ad operationem ut ad suum actum, ita se habet essentia ad esse. In solo Deo autem idem est intelligere quod suum esse. Unde in solo Deo intellectus est eius essentia" (*ST*, I, q. 79, a. 1).

And so, in response to an objection using Aristotle's maxim against this very position, St. Thomas must resort to laying bare the distinct senses of "life" underlying its application to being. "To live for living things is to be, as is said in the *De Anima*, Book II. But understanding is a kind of living, as is also said there. Therefore the understanding of an angel is its being." The answer is in terms of the distinction made earlier in the *Summa*.

Living is at times taken to mean the very being of a living thing, and at other times an operation of life, that is that by which it is manifested that a thing is alive. And in the latter sense does the Philosopher say that understanding is a kind of living, for there he is distinguishing the different levels of living things according to the different activities of life.⁵³

The same qualification is made immediately on the heels of the identification of life and being in the *De Veritate*.

In us, no operation to which we set ourselves is our being (*esse*); hence our understanding is not our life, properly speaking, except insofar as living is taken to mean the activity which is the sign of life . . . But the understanding of the Word is His being.⁵⁴

Though "life" has two senses, "understanding" has not and can properly mean only operation. Being and operation merge only in God; being and "understanding" merge only in the divine Word.

St. Thomas explains his insistence that "to understand" and "to be" are different in man on the basis that only being has an immediate or proximate principle in the essence itself. Any operation has its principle in the faculty rather than in the essence, or else the agent could not be without always so acting (since the latter would be his very being). But only in God are being and acting, powers and essence, the same.⁵⁵ The only "act" of the essence directly and immediately is being. The way this analogue between operation and being recurs indicates that in spite of his objections against it St. Thomas needs to use it in his argumentation. Since it has a real basis, it can contribute much to our understanding. We must qualify it, however, with the reservations he has himself imposed on it.

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VIII. APPLICATION TO UNDERSTANDING AND OTHER OPERATIONS

We must grant that no creature's activity of understanding in *this* sense of operation is its being; but cannot *intelligere* be *elevated* to mean *esse* and thus given a second technical sense, just as *vivere*? It would seem that St. Thomas would have to allow for such a usage. The ambiguity of these notions is at least general enough to apply to the contrary of life. In view of the twofold meaning of life, as being and as operations (the first explained in terms of the causality of being peculiar to the soul as form), then,

. . . since death is the privation of life, it must be similarly distinguished: so that at times it designates the loss of that union by which the soul is united to the body as its form, at other times the loss of the activities of life.⁵⁶

The latter is the fact that we sensibly recognize when we call a body a corpse or when a coroner pronounces a man dead. Metaphysically it signifies that the animate body has ceased to be—as animate—owing to the loss of soul. The form is gone, and the being of this matter is no longer what it was. The parallel is perfect.

In fact, in the central place where he develops the two senses of *vita*, after pointing out that Aristotle's text on the division of life by sensation, growth, locomotion, and so on, involves the sense prior in the order of naming and knowledge, St. Thomas seems suddenly to realize the generality of his own reasons for the distinction and changes the tack of the argument. "Better yet, one should say that sensing and

⁵⁶" . . . vivere dicitur dupliciter. Uno modo ipsum esse viventis, quod relinquitur ex hoc quod anima unitur corpori ut forma. Alio modo ponitur vivere pro operatione vitae; et sic distinguit Philosophus in II De Anima vivere per intelligere et sentire et alias animae operationes. Et similiter, cum mors sit privatio vitae, oportet quod similiter distinguatur: ita quod quandoque designet privationem illius unionis qua anima corpori unitur ut forma, aliquando vero privationem operum vitae" (*De Ver.*, q. 13, a. 4 ad 2; I, 373-74).

⁵⁷"Vel dicendum est melius, quod

sentire et intelligere, et huiusmodi, quandoque sumuntur pro quibusdam operationibus; quandoque autem pro ipso esse sic operantium" (*ST*, I, q. 18, a. 2 ad 1 [cf. n. 50 above]).

⁵⁸" . . . vita non est operatio, sed ipsum esse viventium. Ergo ultimus finis, qui est beatitudo, non est operatio" (*ibid.*, I-II, q. 3, a. 2, obj. 1). " . . . vita dicitur dupliciter. Uno modo, ipsum esse viventis. Et sic beatitudo non est vita . . . solius enim Dei beatitudo est suum esse. Alio modo dicitur vita ipsa operatio viventis, secundum quam principium vitae in actum reducitur" (*ibid.*, ad 1).

understanding, and terms of this sort, are at times taken to mean various operations, and at other times the very being of the things that so operate.”⁵⁷ All verbs denoting operations can be transferred to mean the being of the things characterized by those operations. This would certainly follow from the metaphysics of this text, reviewed above, and would further give a solid technical justification for the examples of *calefacere* and *lucere* used to explain *esse* as act of essence in the *Sentences*.

Perhaps since the order of knowledge is involved here, which proceeds from the sensible to the insensible in things, it would not occur at once that “understanding” could mean a kind of being. To shine, to heat, to live, are all activities that we sensibly perceive things doing. Understanding is insensible and not at once apparent. It itself is reasoned to as a conclusion and described by negations of the characteristics of the material order. To speak of it as a “sign” of a certain nature, and furthermore of the act of being that constitutes that nature as a modification of being, would be at first sight a bit bizarre. A sign is something sensible. Once the knowledge of an immaterial activity is within our grasp, however, is it not in terms of it that we know the immaterial nature and hence the being of that nature? After all, the operation of reasoning is what indicates to us, and indeed gives us, the name for the specific difference of man.

It is at least clear that in the context of the questions on man and the angels, such a far-reaching principle would necessarily be ignored, since the issue there is to analyze the structure of creatures in terms of essence, faculties, and acts, and to delineate their composite nature as an imperfect manifestation of the simplicity of God. Their complexity stands out more clearly when *intelligere* means only operation. But what of discussions removed from this context, especially in the later treatises, where we can expect a development towards greater consistency?

The Aristotelian maxim is invoked again early in the *Prima Secundae* to prove that life and therefore eternal life is not operation but being. The answer to this objection merely repeats the distinction of the *Prima Pars*, but in such a way as to give a rather general reason for the equivocation. “The operation of a living thing” is that “according

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to which the principle of life is reduced to act.”⁵⁸ The form is actual in the first place by being, but its operating also accounts for and increases its actuality. So the two are not unconnected.

The maxim is brought forth again to the same purpose in the *Secunda Secundae*. This time the answer goes back to the general terms of the original discussion, stating them even more tersely and incisively.

The form proper to any given thing, which causes it to be in act, is the principle of its proper operation. And therefore living is said to be the being of living things, because the living operate in such a way by the fact that they have being through their own form.⁵⁹

Since the type of being that things have is derived from their form (as formal cause) and since their form makes them operate in a specific way, the name of their operation can be used to describe their being. Nothing could be more general; the principles set forth are common to all things that act and are.

As a matter of fact, St. Thomas does state directly that *intelligere*

⁵⁹“Anima enim est principium vitae per suam essentiam: dicit enim Philosophus, in II *De anima*, quod *vivere viventibus est esse*” (*ibid.*, II-II, q. 179, a. 1, obj. 1). “. . . propria forma uniuscuiusque faciens ipsum esse in actu, est principium propriae operationis ipsius. Et ideo vivere dicitur esse viventium ex eo quod viventia per hoc quod habent esse per suam formam, tali modo operantur” (*ibid.*, ad 1).

⁶⁰“. . . anima, in quantum est forma corporis secundum suam essentiam, dat esse corpori, in quantum est forma substantialis; et dat sibi huiusmodi esse quod est vivere, in quantum est talis forma, scilicet anima; et dat ei huiusmodi vivere, scilicet intellectuali natura, in quantum est talis anima, scilicet intellectiva. Intelligere autem quandoque sumitur pro operatione, et sic principium ejus est potentia vel habitus; quandoque vero pro ipso esse intellectualis naturae, et sic principium ejus quod est intelligere, est ipsa

essentia animae intellectivae” (*De Spir. Creat.*, a. 11 ad 14; III, 90). The difficult expression *ejus quod est intelligere* resembles *id quod est esse*, frequently used by Thomas to isolate more precisely the act of being.

⁶¹“. . . cum vivere sit esse viventibus, ut dicitur in II *De Anima*, videtur quod vita sit essentia” (*ST*, I, q. 54, a. 1, obj. 2). “. . . vita non hoc modo se habet ad vivere, sicut essentia ad esse: sed sicut *cursus* ad *currere*, quorum unum significat actum in abstracto, aliud in concreto. Unde non sequitur, si vivere sit esse, quod vita sit essentia. Quamvis etiam quandoque *vita* pro essentia ponitur” (*ibid.*, ad 2). The same clarification is found in two of the chief texts we have used: (*CG*, I, cap. 98, *ST*, I, q. 18, a. 2).

The general explanation of the use of such abstract nouns for the action expressed by the cognate verb is in a logical work, naturally enough, *In I Periherm.*, cap. 5; ed. Leon., No. 5.

has the same twofold meaning as *vivere* for exactly the same reason, the formal causality of being, here laid out in complete detail.

The soul, which is by its essence the form of the body, gives being (*esse*) to the body insofar as it is a substantial form; and gives it the sort of being which is living, insofar as it is that sort of form, namely a soul; and gives it the sort of living that is governed by an intellectual nature, insofar as it is that sort of soul, namely intellectual. Understanding is taken to mean at times operation, and in this sense its principle is a potency or capacity, but at other times the very being (*esse*) of the intellectual nature, and in this sense the principle of the act "to understand" is the very essence of the intellectual soul.⁶⁰

To understand is being for intelligent things. In the case of angels, we can say *intelligere intelligentiis est esse*. For an animal, to live is to be; for man, to understand after his own fashion—that is, to reason—is to be. For things whose essence is "heater" or "lighter" (even if these sound like twentieth-century artifacts, Aristotle says of artificial things that the purpose of the maker gives us their form), to heat or to light is to be. Things fulfill their being by their operation; the name can be transferred from one to another.

Before concluding, we should examine one more point in St. Thomas's treatment of this maxim in order to eliminate a possible quibble over words. We have used "life," "to live," and "living" (the noun) indifferently. This is perfectly justified by St. Thomas's own vocabulary. He takes pains to clear up a possible misunderstanding of Aristotle's maxim as based on verbal considerations. "Life" (*vita*) does not mean the essence of a living thing because it is related to *vivere* as *essentia* to *esse*. It is just another word for "to live" (*vivere*) and equally transferrable to essence and being for metaphysical reasons. It is the abstract name for the act (as today we use "existence" for the act of being). In this it resembles the word "race" (*cursus*), which means nothing more than "a running" (*currere*)—it names the act "to run."⁶¹

IX. CONCLUSION: THE METAPHYSICAL GROUNDWORD UNDERLYING THE THOMISTIC INTERPRETATION OF THE MAXIM

The central theme running through the whole of St. Thomas's unique treatment of this maxim is the relation of being and form. Though the dynamic act of being makes a form to be, form has an influence on this act in the line of essentiality, making a thing to be what it is. This latter notion is borrowed wholesale from Aristotle, who recognizes no other meaning for being than what-is. When speaking of form as *causing* being, St. Thomas must therefore qualify the statement, since for him it does not cause being absolutely as it does for Aristotle; but when essentiality is the only meaning of being that is at stake, he can afford to be a literal Aristotelian.

Each and every thing is what it is through its form; but the form presupposes some things, and others follow of necessity upon it . . . An inclination to an end, to action, or to anything of this sort follows upon form, since everything, insofar as it actually is, acts and tends towards what suits it in terms of its form.⁶²

Given that a form *is*, it immediately springs into operation in order to perfect itself. This inevitable accompaniment of form is thus actually a direct consequence of being, without which a form is no form. *Agere sequitur esse*. Everything that is acts to the extent that it is, for without being it cannot have the form that defines its being and impels it to action as well.

In this sense, "first act" relative to activity is almost the being that the form causes, the act of being modified by its form. This would bring us back to the language of the *Sentences*, where "first act" is

⁶²"Cum autem unumquodque sit id quod est, per suam formam; forma autem praesupponit quaedam, et quaedam ad ipsam ex necessitate consequuntur . . . Ad formam autem consequitur inclinatio ad finem, aut ad actionem, aut ad aliquid huiusmodi: quia unumquodque, inquantum est actu, agit, et tendit in id quod sibi convenit secundum suam formam" (*ST*, I, q. 5, a. 5).

⁶³"Primus autem effectus formae est esse: nam omnis res habet esse secundum suam formam. Secundus autem

effectus est operatio: nam omne agens agit per suam formam" (*ibid.*, q. 42, a. 1 ad 1).

⁶⁴"Esse autem secundum se competit formae: unumquodque enim est ens actu secundum quod habet formam. Materia vero est ens actu per formam . . . quia enim unumquodque operatur secundum quod est actu, operatio rei indicat modum esse ipsius" (*ibid.*, q. 50, a. 5).

⁶⁵*Ibid.*, q. 75, a. 3.

vivere (as *esse*), although elsewhere it is *vivificare* (the form). Form is act only in virtue of the act of all acts. If we are to make up a category of act based on visible actions and apply the name to their root cause, being will be what we denote by it, the name expressing a certain way of being. Only it has the dynamic quality needed to justify the denomination "act." Form is only a modifier, a regulator, an "according to which" that qualifies first being, and secondly operation. "The first effect of form is 'to be,' for every thing has being according to its form. The second effect of form is operation, for every agent acts through its form."⁶³

This notion of form as a "mode of expression" of the energy of the act of being (which, when taken by itself, bursts into pure perfection that denies limit and resists any qualification) is not an innovating interpretation of St. Thomas. It is stated clearly in texts that bear directly on our subject. Form and being are inseparable. There must be a form for a thing to be (it makes it that thing); and if form is to be at all (even to be form) it must have being first. Form transmits this being that clings to it to the matter in the composite. Now the operation of a thing is after the manner of its being, the consequence of form.

To be of its very nature belongs to the form, for everything is an actual being (*ens*) insofar as it has form. Matter is an actual being through form . . . now because everything operates insofar as it actually is, the operation of a thing indicates its mode of being.⁶⁴

Operatio rei indicat modum esse ipsius. This condenses into a veritable *authenticum* the whole point of this paper. St. Thomas is as expert as Aristotle in the construction of proverbial sentences. As a philosopher's thought contains fewer concepts the greater its maturity, so his style begins to contain fewer words. Operation indicates not form alone without being but form as the mode of being, or even the "to be" as modified. The same implication underlies the terse line, *Similiter enim unumquodque habet esse et operationem.*⁶⁵ "In like manner," "after the same fashion," does a thing have being

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and operation. The manner and the fashion are defined by form, which is the mode of both being and operation.

The only places where these doctrines are denied have in their background the intellectual analysis whereby we consider the principles of existent things in abstraction from the composite to define what pertains to them as such or is caused by them alone. When it is a question of "life in itself" and "being in itself," the acts considered just as such, *vivere* refers only to operation, not to being.⁶⁶ In this state of abstraction, the act of being does not involve (or exclude) operation, while life does. This is another reason why St. Thomas might refuse to compare being and operation, when the abstract consideration of the act in itself is operative in the back of his mind.

Renard has made some excellent remarks on the Thomistic meaning of this maxim, which deserve citation for the light they cast on the subject.

In a being whose "to be" is limited by the essence, this limitation, this lack of perfection can only be diminished by action. Action, then, is, we might say, a continuation, an efflorescence of the act of existence by which being is in act. For a being acts insofar as it is in act . . . Action, whether it is the act of a perfect or of an imperfect being, is simultaneously an overflowing of the perfection of the "to be," and a perfecting of its neediness. This is the preamble to any satisfactory understanding of the perfective evolution which we find in this world.⁶⁷

Nevertheless, we find it difficult to accept the premises with which he

⁶⁶" . . . illud quod est vere aeternum, non solum est ens, sed vivens: et ipsum vivere se extendit quodammodo ad operationem, non autem esse" (ST, I, 10, 1, ad 2m).

⁶⁷Henri Renard, S.J., "Essence and Existence," *P.A.C.P.A.*, XXI (1946), 61. See also the more technical statement on p. 62.

⁶⁸This language will be found nowhere in the *De Ente*, let alone any "proof" of the "real distinction" from an analysis of the two notions, as Father Renard maintains. If it be proved at all, it is from a consideration of the unicity of God, the existence of

a subsistent act of being having already been proven (compare cap. 3, pp. 24-26, with cap. 4, pp. 34-36). Nor can we agree that essence is a merely negative determination of being, a conclusion that seems to result from regarding essence and existence as an instance of act and potency in general. *De Ente*, cap. 1, implies the exact opposite. The penetrating remarks of J. Owens, "The Accidental and Essential Character of Being in the Doctrine of St. Thomas Aquinas," *Med. Stud.*, XX (1958), 38-39, show that to imagine any other than a positive principle limiting being demands hypostasizing "to be."

begins this discussion. Two points are particularly worth mention. One is his constant terminology of "the real distinction between essence and existence," which is not St. Thomas's at all—and perhaps for a good reason, since it overstates the case.⁶⁸ It could well obscure the intimate and essential connection of being and essence which lies at the basis of the doctrine St. Thomas develops in connection with Aristotle's maxim.

The second is the notion that this "real distinction" is a "corollary" of a more general "principle" of act and potency. We have seen the flexibility with which St. Thomas himself applies that "principle" to essence and being, particularly when he vacillates on the comparison of being with activities. Sometimes he takes up and at other times he drops such notions, always qualifying and transforming them by reservations, using them almost in an attempt to find something with which to express what he has to say. Nowhere is the doctrine of being regarded as a deduction from, or even a "first instance" of, a fixed and rigid general principle of act and potency. This "principle" even has a flexible and ambiguous character in its originator, Aristotle, where its various "applications" are so different in character as to have the barest content in common.

The Aristotelianism of St. Thomas cannot be reduced to a generalizing extension of such notions as act and potency. In its mature form, free of the clumsiness of the *Sentences*, it is a far more subtle historical phenomenon that almost defies description, as his handling of this maxim and its related implications reveals. In Aristotle the form is *energeia*, "energy," the dynamic source of all the doings and growings of the composite. Let it be present in matter, and it at once initiates a perfecting evolution of the material thing, progressing within the species as far as the imperfection caused by matter will allow. Since the perfect species of an animal is not exhausted in one individual, the form crowns its achievements by generating another like the first but realizing other particular facets of the specific perfection in another matter. Where form in Aristotle is the fountainhead of a river of activities, being is the source in St. Thomas. Provided we are conscious of the Platonizing inherent in the example, we may say that for him form is only a dam or stricture, through which the flow

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of being must pass. Being enters a thing as pure energy and becomes shaped and channeled into activity as it leaves the other side.

St. Thomas is unwilling to attribute all the dynamism of Aristotelian substances to form alone, unwilling to link the notions of act and energy with those of finitude and specific definition. As a Christian, he knows of an all-perfect infinite God who is Being Itself. As a metaphysician, he interprets this being as act and finds that the description of subsistent Being in the Parmenidean-Platonic tradition (known to him as we have seen through pseudo-Dionysius) perfectly applies to God. For him, the reciprocal couple of inseparable principles, form and the act of being, do what form alone ("being as being" in things) did for Aristotle. Only now the dynamism and energy are all rooted in the act of being ("being as being" in things), while form retains from Aristotle only the notions of finitude, definiteness, circumscription, and limitation. But since the couple is inseparable, everything Aristotle said of form can still be said either of form (which always is) or of being (which is always modified by form), as the occasion demands. This will be the ordinary way of speaking about existent things, barring an occasional analytical precision of one of the two principles from the other and a study of it in itself.

Thus from St. Thomas's standpoint, Aristotle's only fault was not to drive his search for causes far enough. The entire trunk of Aristotelianism can be grafted into the organic body of St. Thomas's teaching, where it not only survives but even flourishes, since its roots are deeper there than they were in their native soil.⁶⁹

⁶⁹We can hardly conclude without crediting the unpublished University of Toronto Ph.D. thesis by E. Gelinas, "The Relation between Life and Existence, a Study of *Vivere Viventibus Est Esse* as Found in Thomas Aquinas" (1954), which led us to some of the texts used above. His conclusion that *vivere* in the maxim means form, essence, nature, and even *vivificare*

(pp. 68-70, 89, 99, 161-162, 167-169) makes St. Thomas very much the pure Aristotelian, at least in the "quidditative order" (pp. 170-71), from which considerations of "actual existence" would seem to remain forever sundered. The texts suffice to prove that both these ideas are alien to the Thomism of St. Thomas.

THOMISM AND ATOMISM

In a previous article we considered the development of the quantum theory and the various interpretations which have been drawn out of it or read into it.¹ In the present article we wish to consider the same problem, the ultimate constitution of matter, philosophically. Such a consideration immediately encounters the difficulties adumbrated in the previous article. That is, any attempt to explain atomic phenomena in terms of metaphysical realism entails a justification of this realism within the context of the problem treated. Those who reject realism, as a metaphysical doctrine, in the interpretation of submicroscopic phenomena do so primarily because they can discover no means of obtaining knowledge different from or independent of the pertinent physical knowledge. In our opinion, the route leading to a metaphysics of minimal beings does not begin with a new source of atomic knowledge. The point of departure is, rather, the realization that physics and philosophy represent formally distinct ways of knowing reality. Though we do not intend an explicit treatment of this epistemological problem, a sketchy outline of it is necessary to justify the introduction of metaphysical realism and to indicate the limits of its valid application. To ensure precision amid such complications and especially to preserve the distinctness of formally different ways of knowing reality, a formalized schematic outline seems necessary. Though it may be tedious for the reader, it should be an aid to clarity.

I. OUTLINE OF THE PROBLEM

An over-all view reveals two problems, or fields of dispute, which are properly scientific, and three which are philosophical. Needless to say, this division is not intended to be definitive.

The first scientific problem is the physics of the quantum theory. Physicists are inclined to take a rather discouraging view of the present state of quantum theory, especially of the foundations of quantum field theory. However, this critical dissatisfaction is concentrated on the far frontiers of physics and presupposes a basic development which is solidly established. The essential features of the present theory must be contained in any future improved theory. Any philosophical conclusions which contradict these essentials must, at the very least, fall under deep suspicion. Though these scientific developments cannot be deduced from philosophy, they can serve as a negative norm and, in a limited respect, a suggestive guide.

The second scientific problem which we must consider is that of interpreting the pertinent scientific statements. This problem transcends the formalism of scientific theory and the functional interpretations which may suffice within that formalism. As was explained in I, the physicists who commit themselves on this question can be roughly grouped into two camps. The first camp, which would include Einstein, Schrödinger, Bohm, and many physicists of the preceding generation, tries to interpret the successful formulas of quantum mechanics in terms of the space-time behavior of definite things (usually particles, waves, or some combination of the two); and thus it clings to the ideal of a complete description of nature in the sense of classical physics. Bohr, Heisenberg, and the majority of quantum theorists take a more radical view. The laws of physics, they claim, are not space-time descriptions of atomic objects; they merely serve to correlate possible observations. Interphenomena, such as particles and waves, are introduced primarily to further the correlation and are not to be considered as literal descriptions of reality. The more extreme proponents of the latter interpretation clearly intend it to be taken in a maximal sense. That is, they consider it meaningless

¹Edward MacKinnon, S.J., "Atomic Physics and Reality," *THE MODERN SCHOOLMAN*, XXXVIII (November, 1960), 37-59. Hereafter this will be referred to as I.

²A recent nontechnical description of the known particles and their properties may be found in S. B. Treiman, "The Weak Interactions," *Scientific American*, CC (March, 1959), 72-86.

to speak of any reality beyond the phenomena as observed. As was indicated in I, such a denial of reality is a metaphysical rather than a physical position. Here, as physicists, we can content ourselves with the practical realism proper to physics. Physics, in theory and experiment, is concerned with external reality but does not treat it under the aspect of being.

Here we intend to follow the Copenhagen interpretation, but in a minimal rather than a maximal sense, as a physical theory, not as a philosophy. The formalism of quantum theory does serve to correlate phenomena as observed. It does not and cannot treat the question of the nature of the reality whose contours it limits. Within this framework of practical realism we can list and explain a few basic statements pertinent to the present study which modern physics seems to have either established or confirmed. These statements are of such a qualitative nature that they form an accepted, often unexamined, part of the scientist's mental furniture. Yet, a subsidiary awareness of these points is presupposed in the scientist's focal awareness of his more technical problems.

1

FUNDAMENTAL PARTICLES EXIST

"Fundamental" is used here in a conventional sense. The fundamental particles are those which physicists generally list as such: electrons, nucleons, mesons, and so on. Some of these—for example, nucleons and hyperons—may eventually be resolved into even more basic units. Yet they are fundamental on one level of explanation, the present one. "Exist" is used in as vague a sense as "fundamental." That is, we are not opting for the existence of particles rather than waves. The observed particle properties may well be the result of the interaction of more basic fields. We follow the current convention which uses "particle" as a generic term for electrons, and so on. We are merely insisting that these particles are more than mere constructs; they have some sort of objective existence. In the practical realism proper to physics, this is a necessary presupposition made by anyone who wishes to construct a particle accelerator, interpret the tracks of particles on a photographic plate, or perform virtually any atomic experiment.²

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THESE PARTICLES HAVE SYSTEMATIC INTERACTIONS

Physicists generally catalogue these interactions as strong, electromagnetic, weak, and gravitational. We may prescind from such details and simply retain the conclusion that the particles tend to be active and easily combine with each other.

3

THESE PARTICLES CAN FORM COMPLEX UNITS WHICH ARE MORE STABLE

Here scientific realism finds one of its strongest justifications. It can be stated apodictically that the chart of chemical atoms from one to one hundred is complete and that basic properties of these atoms are known.

4

KNOWLEDGE OF ULTIMATE PHYSICAL REALITY WILL ALWAYS
POSSESS A CERTAIN DEGREE OF INDETERMINACY

This was discussed in detail in I, where it was shown that the observations which constitute the source of scientific knowledge inevitably entail some indeterminism with regard to atomic phenomena.

5

THERE IS NO SUCH THING AS A COMPLETELY ISOLATED SYSTEM

This is the working hypothesis underlying the current attempts to construct a satisfactory quantum theory of fields. The experimental underpinning of this statement is supplied by the nature of the measuring processes by which atomic reality is known. Traditionally, science proceeds by means of a relative isolation. That is, the aspect of the system to be examined is isolated from disturbing influences to the degree required by the experiment. For an atomic system, such

³A detailed discussion of the relation between the philosophy of nature and physics, with particular reference to atomic physics, may be found in Andrew G. VanMelsen, *From Atomos to Atom: The History of the Concept Atom*, trans. Henry J. Koren, s.s.sp.

(Pittsburgh: Duquesne Univ. Press, 1952), chap. vi.

⁴Wolfgang Büchel, s.j., "Zur Naturphilosophischerkenntnistheoretischen Problem der Quanten Physik," *Scholastik*, XXVIII (1953), 161-85.

a relative isolation implies that a conjugal aspect of the observed system is inevitably subject to random uncontrollable disturbances from its reaction to its environment. Hence, as was shown in I, if a completely isolated system did exist, it could not be known and need not be considered in any attempt to explain the observed universe.

B

PHILOSOPHICAL PROBLEMS

The philosophical aspects of the present problem extend to three separate fields of philosophy which should be considered, at least in a cursory way. First among them is the philosophy of nature, the study of changeable being inasmuch as it is changeable. In spite of its importance in this context, we shall transmit this problem, since our concern is with metaphysics, a formally distinct branch of knowledge.³

1

EPISTEMOLOGY

a) Negative: The epistemological problems may not be side-stepped so easily. There is a negative problem and a positive one, and before we proceed further we must take a stand on each. The negative problem is a refutation. The Copenhagen school and the positivists would claim that the arguments employed to justify critical realism have been invalidated by the developments in physics, particularly atomic physics. From a careful examination of this contention Büchel concludes that critical realism has not at all been invalidated; it has merely been misunderstood.⁴ We will summarize his argument. The traditional arguments of epistemology certainly justify a belief in the real existence of material objects of a macroscopic size; for example, a table. If, as modern physics indicates, this table is composed of sub-microscopic particles, these fundamental constituents must have an objective existence as real as the whole they compose. Scientists have called this real existence into question because the methods which yield scientific information about atomic reality do not allow a sharp

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distinction between the subjective and objective components. The conclusion that should be drawn from this difficulty is that macroscopic *concepts* are inadequate when applied to the microworld. It is in these concepts that the subjective and objective elements are fused.

Büchel uses a simple analogy to clarify this. A wall may look yellow under white light and green under blue light. Is its color objective or subjective? There is an objective element, the absorption coefficient of the material in the wall which determines what light is absorbed and what is reflected. There is also a subjective element, the impression this light makes on the receiving subject. The distinction is not as neat in the microscopic realm, but it is still present. For example, the concept 'place' when applied to an electron must have an objective element. Two reasons are given. First, the concept, 'place,' may be applied to macroscopic bodies which are composed of elementary particles. Since there must be some continuity between the properties of the particle and the composite, 'place' must have some significance for the particle. Secondly, under certain circumstances an objective meaning can be given to the location of an electron; for example, by relating it to a spot on a photographic plate. The subjective element enters chiefly in the limits attached to the concept. The precise localization attributed to macroscopic objects does not seem to be applicable to submicroscopic objects except through arbitrary, and thus subjective, definitions.

Transposing this argument into the language of Scholastic philosophy, one might say that the true critical problem here is not the justification of critical realism. It is rather the need to determine the limits of validity of *analogous* concepts. Since such things as position and momentum could be defined in a precise mathematical way it was implicitly assumed that the application of these concepts to reality must be univocal. Such univocal predication inevitably leads to contradictions in explaining atomic phenomena. When it was

⁵This treatment is adapted from George P. Klubertanz, S.J., "The Doctrine of St. Thomas and Modern Science," *Sapientia Aquinatis*, I (1955), 89-104.

⁶R. J. Henle, S.J., "Saint Thomas' Methodology in the Treatment of 'Positiones,'" *Gregorianum*, XXXVI (1955), 391-405 summarizes the technical

meanings of *via* and *positio* in St. Thomas: "Thus the *via* and the *positio* taken together constitute a miniature philosophical system which is properly deployed and displayed according to the formal movement of its thought. Now, if philosophy involves a movement of rational thought by which conclusions are either reached or, if the fact of the

abandoned, as it had to be, the only available alternatives seemed to be either equivocity—valid macroscopic concepts have no valid application to elementary particles—or, what was more common, an insistence on operational definitions. A concept, such as the position of an electron, has *no* meaning except in terms of the operations by which it is measured. In the second part of this paper we shall try to examine the valid application of the doctrine of analogy to atomic particles. For our present purposes we conclude that critical realism has not been refuted by the advances in science. Rather, its validity is established independent of science, and we presuppose this establishment in whatever reality we attach to the objects of science.

b) *Positive*: The positive epistemological problem which we must consider is the relation between physics and philosophy as sciences in the broad sense. This problem has what may be called a formal and a material aspect. The formal aspect concerns the relation between propositions proper to each of the two systems.⁵ A proposition which is *per se* evident—the whole is greater than a part—contains its formal knowability within the proposition itself. The formal knowability of a derived proposition lies in the reasons because of which one assents to the proposition. For example, two students assent to a geometrical conclusion, one because he understands the proof and the other because he believes in the teacher. Though the proposition they accept is materially the same for both students, the formal knowability, that which makes the proposition a scientific statement in the strict sense, differs. Only one of the two is a geometrician.

In a philosophical investigation of the ultimate constitution of material bodies one must compare philosophical statements about material bodies with scientific statements. Even when the statements may seem to coincide—if, for example, the philosopher and the scientist agree that elementary particles must be active—the formal intelligibility of the two statements differs. To compare statements from the two disciplines one must either employ an elaborate formal theory of knowledge interrelating them or deprive the propositions of their strict technical sense. Traditionally, such an imprecise statement is called a *positio*.⁶ That is, it stands as an isolated proposition rather than as a

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proposition which participates in the formal intelligibility of the scientific system from which it is derived. In this paper we are limiting ourselves to a minimal correspondence between physics and philosophy. It was for this reason that we tried to summarize some of the pertinent physics in the form of *positiones*, or non-technical statements—the five numbered propositions given earlier.

Though philosophical and scientific statements do not have the same formal intelligibility they may have the same material object. In this consideration we have the material aspect of the present subproblem. Both physics and philosophy can consider the same set of objects in the universe, here elementary particles. Unfortunately, even with reference to the material object, new epistemological difficulties crop up in each discipline. The philosophical ones will be considered in the next section. The scientific ones arise from the nature and methods of science. Physics is generally considered to be a hypothetical deductive system which makes liberal use of constructural elements.⁷ The difficulty comes in determining when a scientific statement, even one considered in a nontechnical sense, is a statement about the external world, and when it is merely a statement about constructs which may be related to scientific observations.

Consider the two scientific statements: "A water molecule is composed of two atoms of hydrogen and one atom of oxygen;" and "An atomic wave function may be invariant under time reversal and yet change parity under space inversion." The first statement, taken as a *positio*, may be considered as a statement about real material objects. If the second statement is taken as a *positio*;—that is, stripped of its technical intelligibility—it is difficult to interpret it as a statement concerning the physical properties of real material objects. Between these two extremes, which may be dubbed physical statements

conclusion is already given, understood through premises, the *via-positio* analysis is a proper and formal philosophical analysis. A conclusion or *positio*, divorced from the context of its principles, cannot be *philosophically* determined; it cannot even be said to be a *philosophical conclusion*."

⁷Henry Margenau, who claims to have introduced the term 'construct' in modern physics, gives a detailed explanation of its meaning in *The Nature of Physical Reality: A Philos-*

ophy of Modern Physics (New York: McGraw-Hill, 1950), chap. vi. However, we do not subscribe to all the conclusions he draws from this doctrine.

⁸See Robert J. Henle, S.J., *Method in Metaphysics* (Milwaukee: Marquette Univ. Press, 1951); J. Owens, C.S.S.R., "The Intelligibility of Being", *Gregorianum*, XXXVI (1955), 169-93; George P. Klubertanz, S.J., "What is the Evidence for Thomistic Metaphysics?", *Revue Phil. de Louvain*, LVI (1958), 294-315.

and constructural statements, lies a penumbral region containing statements whose physical content is not altogether clear. A rigorous analysis of such statements would be very difficult. The very non-rigorous method which we are following here is a simple reliance on personal judgment. The five statements numbered above seem to refer principally to the physical world rather than to constructs. Accordingly, they will be considered as scientific *positiones*. Provided these statements are interpreted in a minimal nontechnical sense, the lack of rigor should cause no serious difficulty.

2

METAPHYSICS

The final problem in this general survey is concerned with the evidential basis for a metaphysics of minimal beings. A realistic metaphysics is not a deductive system based on abstract principles. Rather it argues from the evidence of the real as experienced to the nature of the real as it exists. Recent studies have stressed the fact that the evidential basis for Thomistic metaphysics is immediate sense experience.⁸ In the present problem, do we have any adequate sense data? No one has ever seen an atom, much less an electron. The involved inferential reasoning which leads one to believe that these bodies are real hardly has the immediacy dear to the heart of metaphysicians of a Thomistic persuasion. How can one bridge these noetic difficulties and discuss the metaphysics of elementary particles?

The bridge which we have been endeavoring to construct has three props. First, fundamental particles exist. This was explained previously in terms of the practical; e.g., for example, nonmetaphysical realism proper to physics. This supplies the data, the material object for metaphysical analysis. Secondly, independent of atomic phenomena and the related difficulties, the metaphysical principles proper to being as being are validly developed from an analysis of the objects more immediately known and of the knowing subject. Since these principles are proper to all beings, they should be applicable, analogously, to whatever beings exist in the atomic and subatomic realm.

To establish a metaphysical analysis one final prop is necessary.

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The metaphysical principles known from an analysis of macroscopic objects must be tailored to fit the microworld. The means which we shall employ to effect such an analogous attribution, the doctrine of the grades of being, requires some explanation. In the thought of St. Thomas, which we are trying to follow, the theory of the gradation of being is a consequence of the doctrine that the universe was created according to a purposeful, orderly design, that it might resemble its Creator.⁹ No individual creature can be a perfect likeness of God. A more adequate manifestation of the divine power is had if there is a diversity of creatures hierarchically ordered according to their grade of being. This, he felt, is the ultimate explanation of the diversity and inequality of created things.¹⁰

When St. Thomas attempted to elaborate this doctrine by listing the different grades of being, he drew on the limited and usually erroneous science of his day. It is because of these indefensible details that the doctrine is generally neglected. However, the basis of his doctrine was not an erroneous science but an understanding of creation which is as true now as it was then. As Sertillanges explained this point, "He was not concerned with astronomy, nor with cosmology properly speaking; he was concerned with the metaphysics of being and of its relation with its source."¹¹ The purpose of creation has not changed since the days of Aquinas. Accordingly, we will use his fundamental explanation of the structure of the created universe as the basis for our own argumentation. That is, we accept the idea that the universe was created according to an orderly design and that one manifestation of this design is the fact that there are different grades of being. On this basis we shall try for some sort of explanation of minimal beings.

Before beginning, a precautionary note is in order. The frequent citations from St. Thomas are not offered in the vain hope of deducing the data of modern physics from his principles or even to support a claim that the doctrine presented here represents the mind of St. Thomas. What we are trying to do is to draw some conclusions from his

⁹See Phillip Donnelly, s.j., "Saint Thomas and the Ultimate Purpose of Creation," *Theological Studies*, II (1941), 53-83.

¹⁰*Summa contra Gentiles*, II, chap. 45.

¹¹R. P. Sertillanges, *La Philosophie de S. Thomas d'Aquin* (Nouvelle éd.; Paris: Aubier, 1940), I, 277.

¹²See *Summa Theologiae*, I, q. 22, a. 4; q. 47, a. 2; q. 48, a. 2.

¹³To keep this distinction clear, "particle" will be used in a scientific context and "element" in a philosophical one.

principles which seem appropriate for the present problem. It would be quite easy to gerrymander the conclusions to fit the data. In fact, this could be done inadvertently. In an attempt to obviate this difficulty we shall try to show, whenever possible, that our application of Thomistic principles is consistent with his own interpretation of them. Nevertheless, the conclusions drawn from such a-priori reasoning cannot lay claim to be anything more than plausible.

II

METAPHYSICS OF MINIMAL BEINGS

Our attempt to understand the nature of sub-atomic reality will be based on the introduction of yet one more thought-experiment. However, this thought-experiment will be metaphysical rather than a physical one. Its basis is supplied by St. Thomas: "Now after the divine goodness, which is an extrinsic end to all things, the principal good in things themselves is the perfection of the universe; which would not be, were not all grades of being found in things. Whence it pertains to divine providence to produce every grade of being."¹² What might be meant by "all grades" need not concern us. From the grades present we arbitrarily select the lowest and assume, as a working hypothesis, that the principles of Thomistic metaphysics, as interpreted through the gradation of being, can supply a rational explanation of this grade of being. For convenience, we shall designate the beings proper to this grade as "elements." We do not intend to imply that these elements are necessarily the fundamental particles of physics.¹³ What we hope to obtain from our experiment are some philosophical conclusions concerning elements which may be compared with the scientific *positiones* concerning fundamental particles. At best, this can supply a minimal correspondence; yet even that may contribute to our understanding of the material universe.

Supplementing the doctrine of the analogy of being, so closely connected with gradation, is the principle of the limitation of act by potency, a principle proper to all created beings. This automatically divides our study into three parts: essence and existence, matter and form, and substance and accident.

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The basic intrinsic determination of a being's grade of perfection is had from its act of existence: ". . . but all perfection pertains to the perfection of existence; for things are perfect according to the mode in which they exist."¹⁴ The other perfections proper to being are proportional to this degree of participation in existence. This proportionality applies primarily to essences. From his doctrine on creation St. Thomas concluded that the essence of a being is its determined likeness to the divine nature, its exemplary cause.¹⁵ Accordingly, he considered the degree to which a creature resembles its Creator to be the basic sign indicating its grade of being.¹⁶ It is also possible to study the grade of perfection proper to a being from the lower end of the scale. The less a being resembles God, who is pure act, the closer it is to prime matter, which is pure potency.¹⁷ A being with the least degree of participation in existence must be the closest to pure potency. Also, since the essence of a being is the source of its conceptual intelligibility,¹⁸ the being with the least perfect essence must have the least intrinsic intelligibility. One might expect to encounter formidable epistemological problems in any attempt to understand them.

A further conclusion which may be drawn here is rather difficult to express. Since 'being' and 'one' are convertible, the least being should have the least unity. Yet can unity, which seems to be an absolute, admit of degrees? Certainly, the amorphous unity of a loosely organized group is not applicable to an element. It is important to distinguish between the univocal concept 'one' proper to number theory, and the unity of being. Unfortunately, we are only able to express the latter in terms of rather vague descriptions. The least being has the least self-identity; it is the least whatever it is. It should be so merged with its environment that, like a gentle hill on a level plain, it is difficult to determine where it starts and ends, though

¹⁴ST, I, q. 4, a. 2.

¹⁵ST, I, q. 15, a. 2.

¹⁶In *Boeth. de Trin.*, q. 4, a. 2; ST, I, q. 9, a. 1, ad 2; *Comp. Theol.*, chap. 74 and 75.

¹⁷CG, II, chap. 90, par. 5.

¹⁸*De Ente et Essentia*, chap. 1.

¹⁹*Comp. Theol.*, c. 74. See also ST, III, q. 57, a. 4.

²⁰CG, III, chap. 69, par. 27. See also ST, I, q. 14, a. 8; q. 77, a. 1, ad 4.

it is something distinct from its background. The least degree of participation in existence must mean the maximum existential relativity.

B

MATTER AND FORM

It is difficult to discuss the relative predominance of matter and form without seeming to reify these incomplete principles of being. Fortunately, St. Thomas has given a rather clear statement of the idea we wish to develop: "A being is noble and perfect in the measure that it approaches likeness to God, who is pure act without any admixture of potency. Therefore, beings that are supreme among entities must be more in act and must have less of potency, whereas inferior beings must be more in potency."¹⁹

The being we are interested in is the one closest to prime matter; that is, most in potency and least in act. It is reasonable to expect that such an element is highly mutable and easily transformed. This conclusion is based on a consideration of an element with respect to its matter principle. The form, the intrinsic source of a being's specific determination, must fill out the potency of the matter in the element to a very weak degree. That is, though the elements may not be said to be completely undetermined, they are weakly determined.

ACTION

A consideration of matter and form suggests two related problems, action and composites. Though a created being can not act through its substantial form as a proximate principle of action, yet the substantial form is the source from which the inclination to an effect is had.²⁰ As a consequence of this dependence of action on substantial form, we would expect that an element would have the least perfect action. The difficulty comes in trying to determine what "least perfect action" means. It may be of interest to see how St. Thomas interpreted the perfection of action in terms of the rudimentary cosmology of his age:

Powers and actions, however, must be proportionate to the forms from which they proceed. Thus it is that the forms of the ele-

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ments, the most material of beings, have associated with them active and passive qualities, such as heat and cold, wetness and dryness, and other qualities of this sort, which pertain to the disposition of matter. But the forms of composite beings, that is, inanimate beings such as stones and metals, have certain other nobler powers and actions consequent upon their forms because of the powers and action which they participate from the elements of which they are composed. Gold, for example, has the ability to bring joy to the heart; a sapphire has the power to clot the blood. Thus, ever ascending, the more noble the specific forms are, the more excellent are the powers and operations which proceed from these forms. Accordingly, the noblest form, which is the rational soul, has intellectual powers and operations which transcend not only the powers and actions of the elements, but all corporeal powers as well.²¹

In spite of the apparent naïveté of the citation, it does illustrate a basic principle—the perfection of an action depends on the grade of the being which performs the action. It also suggests a norm for judging the relative perfection of actions. The more perfect a being is the more *immanent* are its actions. God is pure immanence. Spiritual beings are intrinsically independent of matter in their proper activities. Climbing down the ladder of being, we would expect elements to be characterized by actions which have the least degree of immanence. More concretely, we might surmise that the proper activities of elements would be so strongly dependent upon environ-

²¹"De Occultis Operationibus Naturae," *Opuscula Omnia necnon Opera Minora*: ed. R. P. Joannes Perrier, o.p. (Paris: Lethielleux, 1949), I, 208.

²²For an explanation of St. Thomas's teaching on the relation between the activities of material bodies and the motion of the spheres, see Bernard Lonergan, s.j., "St. Thomas' Theory of Operations," *Theological Studies*, III (1942), 375-403.

²³ST, I, q. 116, a. 4.

²⁴Similar reasoning often leads philosophical physicists to stress causal relations rather than individual causes. For example, see David Bohm, *Causality and Chance in Modern Physics* (Princeton, N.J.: Van Nostrand, 1957),

chap. 1. The importance of group causality for inorganic bodies has been stressed by Ernest Kilzer, "Efficient Causality in the Philosophy of Nature," *Proceedings of the American Catholic Philosophical Association*, 1941, 142-50.

²⁵This idea of "mesh causality" was derived from Hans Reichenbach's treatment of causality in *The Direction of Time*, ed. Maria Reichenbach (Berkeley: Univ. of California Press, 1956). A suggestive diagram of such a causal mesh is given on p. 37. His theoretical justification—on the basis of Logical Positivism—of such a scheme is contained chiefly in his treatment of the Probability Lattice, sect. 12.

mental influences that any distinction between the activities of the particle and those of the associated fields (the environmental influences) would be somewhat arbitrary.

An adjunct of the problem of action is the question of efficient causality. Following the dictum that a being acts inasmuch as it is in act, it seems reasonable to suppose that the elements should be very inefficient efficient causes; or, to be less facetious, that the determination given to an effect by such an agent is quite limited.

St. Thomas thought out the problem of the causality of elements against the background of medieval cosmology and astronomy. Rather than speak in terms of cause *A* producing effect *B*, he treated both as parts of a dynamically interacting universe. In this scheme *A* is a particular cause specifying the universal cause which is ultimately traced to the motion of the spheres.²² In his explanation of fate St. Thomas indicated the relation between this doctrine of causality and his teaching on the gradation of being with special reference to the lowest grades: "Hence, it is clear that the farther anything is removed from the first mind the more it is involved in the chain of fate, since so much the more is it bound up with second causes."²³

Obviously, the cosmological scheme of motion transmitted through concentric spheres is untenable. Yet here, as elsewhere, St. Thomas's doctrine is primarily determined by his theory of being and its relation to the First Being. Accordingly, it still seems correct to contend that the weak causal efficacy of an individual element must be supplemented by the causal determination given by other agents.²⁴ More concretely, while *A* acts on *B*, it in turn is acted on by a concatenation of causes of the same order and relative degree of efficiency. Accordingly, it seems more appropriate to think of both *A* and *B* as parts of a 'causal mesh' rather than as individual agents or effects.²⁵ If this analysis is true, any treatment of causality which considers only *A* and *B* must show a certain degree of incompleteness which is inversely proportional to the causal efficacy of *A*.

There is one final complication, reciprocal causality. A being acts inasmuch as it is in act but is acted on inasmuch as it is in potency. When *A* acts on *B*, its very activity must be strongly influenced by the reaction of *B*. For example, if one were to describe a possible inter-

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action in which *A* and *B* (for this illustration they may be pictured as miniature billiard balls) collide and alter each other's motion, the usual distinction between cause and effect would not be very helpful.

Putting the three together—a weak determination on the part of the efficient cause; a fuzziness in separating the cause from the effect; and the enveloping causal mesh implies that, while the principle of causality is valid, there must be a certain degree of indeterminacy in assigning a given effect to an individual efficient cause. This, of course, is not the indeterminacy Heisenberg speaks of, which is primarily concerned with measurability. Yet the two types of indeterminism should not be altogether unrelated.

COMPOSITES

The problem of composites is not the proper subject of this paper. We introduce it here only to obviate a possible objection. It is possible that many of the "fundamental" particles of physics are actually composites. In fact, this seems likely in the case of nucleons and hyperons. It might be objected that, if this is true, the correspondence we are attempting to establish between physical "fundamental particles" and philosophical "elements" would be meaningless. Actually a simple composite of elements should have properties not too different from those which we have ascribed to the elements. St. Thomas explained the relation of composites to elements in terms of his doctrine of act and potency:

Now among the acts pertaining to forms, certain gradations are found. Thus, prime matter is in potency, first of all, to the form of an element. When it is existing under the form of an element, it is in potency to the form of a mixed body; that is why the elements are matter for the mixed body . . .

And since a thing is generated and preserved in being by the same reality, there is also an order in the preservation of things, which parallels the foregoing order of generation. Thus we see that mixed bodies are sustained by the appropriate qualities of the elements.²⁶

²⁶CG, III, chap. 22, pars. 7 and 8.

²⁷Petrus Hoenen, *Cosmologia*

(4th ed.; Romae: Typis Pontificis Univ. Gregorianum, 1949), p. 349.

²⁸CG, III, chap. 74, par. 5.

Because of the composite's dependence on the elements for its determined existence and its qualities there should be some continuity of properties and qualities between a composite and the elements of which it is composed. Hoenen has given a detailed treatment of this based on what he calls "Toletus's Principle."²⁷ Two elements combined by acting upon each other and so altering each other's disposition that a new third body arises which combines the qualities of its two progenitors in a unified way. Like the elements of which they are composed, these composites would be close to prime matter, the basic norm we have used in our gradation.

From a physicist's point of view, this conclusion that a composite and an element should have roughly similar properties may seem absurd. However, the striking difference evident in the physicist's treatment of the two occurs in the technical formalism by which the two are described and in the new properties peculiar to the composite. When our philosophical conclusions are compared, as they should be, with the *positiones* drawn from physics rather than the technical formalism, the difficulties become far less serious.

C

SUBSTANCE AND ACCIDENT

As in the preceding sections, we shall limit ourselves to those points in the doctrine of St. Thomas which seem pertinent to the present problem. A substance is that which exists through itself and of which other things are predicated. If this participation in existence is minimal the substance must be minimal in some sense of the word. Since substance acts as potency with respect to accidents and an element is close to pure potency, we would expect an element to have such little substantial unity that it would almost seem to be a bundle of accidents. As St. Thomas explains: "Now it is necessary for the perfection of things that there be among things not only substantial beings but also accidental beings. Indeed, things that do not possess ultimate perfection in their substance must obtain such perfection through accidents, and the more of these there are, the farther are they from the simplicity of God."²⁸ Accordingly, in this section we must be primarily concerned with the accidents proper to elements.

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A distinction of some importance in this context is that between proper and common accidents.²⁹ Both are determinations or modifications of a subject, but they have different causes. A proper accident is caused by the essential principles of the being itself; for example, risibility in a rational animal. A common accident is determined by an extrinsic efficient cause. The temperature of a body, for example, is determined by the cause of heat. Proper accidents may be called the proximate foundation of common accidents. In the example above any macroscopic body, simply because it is a material body, must have some temperature, so that the property of having a temperature is a generic proper accident of material bodies. However, the determined temperature which a body possesses at a given time is due to the external efficient cause which supplies the heat as well as to the disposition of the matter.

A proper accident flows from the essence of a being inasmuch as the being is in act.³⁰ The being least in act, an element, should have the fewest and least determined proper accidents. For example, we might expect that an element's size and shape would be determined in a general way by the nature of the element so that some sort of maximum and minimum size might be assigned. Following St. Thomas, we would expect this size to be quite small.³¹ However, the precise determination of this size and shape would be a common accident and thus dependent upon the causes acting upon it. Since the essence of an element yields such a weak determination and the mesh of environmental influences should be ever active, these extrinsic causes should be the critical factors determining the accidental properties of the elements. A measurement of size or location would supply just such an extrinsic cause. Accordingly, we might expect that the measured properties of an element would depend, in a detailed way, on the precise nature of the measurement performed. In fact, it should not

²⁹ST, I, q. 3, a. 4.

³⁰ST, I, q. 77, a. 6.

³¹Thus St. Thomas writes, "Unde et in formis dicimus aliquid magnum, ex hoc quod est perfectum. Et quia bonum habet rationem perfecti, propter hoc 'in his quae non mole magna sunt, idem est esse maius quod melius,' ut Augustinus dicit" (ST, I-II, q. 52, a. 1).

³²Bohm, *Causality and Chance in Modern Physics*, chap. 2, explains the

role of reductionism in both deterministic and indeterministic philosophies which are mechanistic. Unfortunately, his answer to a faulty reductionism is an infinite reductionism. This may have relevance for physics and its technique of successive approximations but not for metaphysics which can reach ultimates without an infinite process.

be surprising if specifically different types of measurements yield different, and apparently even incompatible, results.

If we may switch temporarily from elements to fundamental particles, the reasoning presented above may be of some assistance in solving a critical problem. Since the knowledge of fundamental particles is based on the measurements performed it should be difficult to separate, even conceptually, the properties and characteristics "proper" to the particle itself from those determined by the causal mesh, including the measuring process. Any structural model or imaginative representation of a particle or an atom generally pictures an isolated thing *with determined accidents*. Such an attempt must fail, not because of the details of the model but rather because the attempt itself entails an essential distortion of the reality represented. Determined effects are assumed while the necessary determining causes are denied.

Nineteenth-century physicists were quite addicted to the practice of constructing conceptual models and were inclined to think of their models as representations of "the thing in itself" (*das Ding an sich*). Their successors in the present century attempted to construct working models of the atom only to meet with eventual frustration whenever these models were interpreted too realistically. Eventually, many concluded that it is impossible to know anything about things in themselves. The best that can be hoped for is a correlation of the observed phenomena. Physically, this attitude represents a repudiation of the earlier mechanistic view. Philosophically, this rejection of earlier ideals represents the same attitude of 'reductionism' that permeated mechanism as a philosophical theory.³² That is, all phenomena should be explainable in terms of a few quantitative laws proper to the ultimate "irreducible" beings. When it was felt that these ultimate beings could be known exactly, mechanism reigned; when this feeling dissolved in disillusionment, it was felt by many that reality simply could not be known, at least on its most basic level. What we have been attempting to show is that the "reductionism" proper to metaphysics entails an explanation of being in terms of intrinsic and extrinsic principles—of the Creator, the source of all being, and of the metaphysical principles proper to all being. In this

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way we can examine minimal beings in the light of more intelligible beings rather than follow the inverted ideal drawn from a sublimated physics.

CONCLUSION

"By indirections," advised Polonius, "find directions out." This we have been endeavoring to do in two different fields. Scientifically, the critical problem was the physical interpretation to be given to a very successful scientific theory, quantum mechanics. Here we followed the Copenhagen interpretation of Bohr, Heisenberg, and others, which supplies an unambiguous correlation between the theory and all the realizable data. However, such a functional interpretation cannot solve the problem of the nature of the reality represented by the theory. When one attempts to go beyond the technical formalism of the theory and make significant statements about the reality represented, little more than generic qualitative statements seem possible. A tentative attempt to make such statements is represented by the five numbered propositions (or *positiones*) given at the beginning of this article. A philosophical investigation of this problem should not only clarify the significance of these statements; it should also afford some insight into the nature of the difficulties attendant upon their formulation.

Such a philosophical investigation of the ultimate constituents of material reality can proceed in two ways. The first entails an epistemological investigation of the sources of pertinent knowledge and the means of exploiting these sources; that is, the different intellectual disciplines employed. This problem was merely outlined and a minimal path relating atomism to Thomism was plotted.

In addition to this epistemological path-finding there is another less secure but more suggestive route, metaphysical speculation. Since we believe that epistemological studies serve to prune and purify formulated theories but do not generate them, we have indulged rather freely in such speculations. By plundering the works of St. Thomas we have found a stimulus and a guide along this route.

The core of this speculation is the idea that elements are minimal beings. The consequences of this idea have been drawn out in some detail and have yielded a view of fundamental reality which is not at all incompatible with the data of science, especially with the modern

emphasis on quantum fields (or environmental influences in our philosophical language). As a final conclusion we wish to show that this approach does afford some insight into the difficulties attendant upon any attempt to make significant statements about the objects of physics apart from the formalism of physics.

According to the traditional, and still valid, point of view one understands a being when he can explain it in terms of the principles proper to that being. However, some understanding may be had, especially of less well known beings, by including them in a conceptual scheme. For example, the name Marsilio Ficino might mean little to many readers. However, if he is included in a conceptual scheme by being labelled a Renaissance Neo-Platonist, one's understanding of him increases. Such schematization is particularly useful in descriptive sciences such as botany.

Elements, as minimal beings, possess a minimal intrinsic intelligibility. Even if all the necessary data were available it would be difficult to understand them by a resolution to principles of being. If they are to be understood at all the bulk of the intelligibility, so to speak, must be supplied from without. This physicists have attempted by means of an elaborate formalism involving a hypothetical, deductive, mathematical system coupled to procedures for experimental verification. One who wishes to learn quantum mechanics must devote his days and nights to establishing a mastery of this system, for the system, the formalism, is the primary thing understood. Particles, atoms, and so on, are explained through this formalism and thus participate in the man-made intelligibility of the system. Though their contribution, viewed under the aspect of intelligibility, may seem small, yet it is decisive. Only those theories which prove successful in explaining the data drawn from reality through experiments are retained. If one now tries to understand these particles as something apart from the system which explains them, he encounters a dearth of intelligibility. Thus a man can spend years studying atomic physics and yet ask, "Do atoms really exist?" This bewilderment should not be a cause for scandal if one believes that elementary particles are minimal beings with a minimal intrinsic intelligibility.

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Concerning the "Real Distinction" of Essence and Existence

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Thomistic metaphysics provides for the unequivocal existence of *res naturae* and *entia rationis*, real individuals in nature and beings of reason in the mind. At the same time it allows the term "being" to be taken in a variety of senses; among these senses must be those appropriate to the principles of being in the composition of individual things. The general question, puzzling to me, is this: In an ontology, providing for the outward existence of real individuals alone, can the principles of being, and the modal distinctions related to these principles, be anything other than *entia rationis*? Or in a slightly different formulation: Is the subtle articulation of interrelated principles in Thomistic metaphysics compatible with the recognition of nothing more than real, concrete individuals on the one hand and of beings of reason on the other?

Maritain tells us that the "real distinction" between essence and existence is "the fundamental intuition upon which everything in Thomism depends."¹ And Gilson has it that "existence is synthetically united with essence in reality. . . ."² Our discussion will be centered, properly enough, upon this "real distinction" and "synthetic union" in reality; furthermore, that part of the analysis in which we are interested has as its purpose an elucidation of first substance—sensible substance, this is to say, with its allegedly double composition of potentiality and actuality.

If the systems of metaphysics elaborated in the past four centuries owe a great, if largely unacknowledged, debt to Duns Scotus and to Suarez—even the systems of antimetaphysics, as I should judge—it will not be surprising to find a certain similarity between the difficulties which Thomistic metaphysics presents for me, and objections already posed by Scotists and Suarezians. If I succeed in doing nothing more than posing some of their objections once again, this would be well worth doing at a time when the status of metaphysical analysis, in the minds of those who make up the philosophical community, is gradually shifting from the category of impossible and absurd projects to the category of possible—if only doubtfully possible—endeavors. In such a time the subcommunity of the metaphysically inclined has an obligation in common to engage every metaphysical tradition in searching criticism. It is not clear to me

that the Scotistic and Suarezian objections have been fully met. But, standing more completely outside this philosophic tradition than do Scotists and Suarezians, it seems likely that my difficulties with the system will be somewhat different from theirs.

To come to the problem, obviously essence and existence are synthetically united or else they are not. These two alternatives will serve to pose, even if they may not match the subtlety of, the problem. From each alternative, I suggest, disturbing consequences follow. If the union of essence and existence is not synthetic, then essence and its components must be granted a kind of existence, and the "real distinction" between essence and existence fails. On the other hand, if essence and existence mark a real distinction, then essence and its components—matter, form, and accident—lose their ontological relevance, and the analysis becomes unintelligible.

Thomism, as we know, adopts the second alternative; and yet there is some ground within the system for claiming the inseparability of essence and existence. In Chapter Two of *De Ente et Essentia* the nature or essence in a thing is said to be its character as comprehending "both matter and form." Now, if ". . . matter does not exist except by means of form" as Thomists say; if form is a causal principle "giving being and actuality;" and if it is to be distinguished from matter by just these characteristics, the kind of existence necessary to these functions cannot be taken from this principle of being without destroying it in concept. If matter is to receive these determinations, if signate matter is "ordered to three dimensions" and is to serve as the principle of individuation, neither can this component of essence be conceived without the existence proper to the ontological role it is to play. Similar remarks might be made for accidents. If existence cannot be sundered from what we have called the components of essence, then existence must be understood as somehow distributed among these ontological elements, and one moves from passive potentiality to existence by a principle of additive determination. Unless I am very badly mistaken, such a principle is at work, at times and to a degree, in the system which is under consideration. In any instance of sensible first substance there appear to be at least three kinds of supervening forms. The "signate" character of signate matter requires an ordering from of "extensionality," or so at least it would seem to one who stands outside this metaphysical tradition. Second, there is the proper form which determines this matter to the species. Third, there are those forms *secundum quid*, called acci-

¹Jacques Maritain, *Existence and the Existent* (New York: Doubleday & Co., 1957), p. 45.

²Etienne Gilson, *Being and Some*

Philosophers (Toronto: Pontifical Institute of Mediaeval Studies, 1949), p. 188.

³*Ibid.*, pp. 185-86.

dents, presumably yielding, along with the other two, the real concrete individual.

But, of course, the principle of additive determination, which I claim to be present as part of the analysis, is not given full scope. If this were a sufficient principle of explanation, the account we have given would be correct; "essence" and "existence" would become adjectival in nature, and it would be necessary to speak of essentialistic and existentialistic aspects of matter, form, and accident. The gaining of additive determinations would effect the transformation from passive potentiality to actuality, and the composition of the principles of being, apart from essence and existence taken separately, would culminate in the real individual of first substance.

In fact the principles of determination with which we have dealt do not yield first substance. They lead only to the "essence" of the individual thing "already constituted in its being," yet lacking in existence. We are, rather, to conceive of such essences, dependent upon—one thinks of adding "awaiting"—the participation of existence, *esse*. And yet there is a passage in Gilson which suggests a function for "existence" in harmony with the principle of additive determination. Referring to existence Gilson writes:

Each and every individual, even among corporeal beings, was henceforward to enjoy its own *to be*, that is, a *to be* of its own; and this is why, in such a doctrine, *to be* is not univocal, but analogical in its own right. True enough, corporeal individuals still remain individuated by matter, but, if they owe matter their individuation, they are indebted to their *to be* for their individuality.³

If the passage is to be taken seriously, it leads, against Gilson's intention, to the point—so at least the passage might be understood—of granting existence a role in the essential determination of the individual thing. In this case existence becomes one of several principles of determination, each of them essentialistic and existentialistic, together producing the first substance. I think the passage is not to be taken seriously. And if it is not to be taken seriously, my point is this: If the "real distinction" between essence and existence is not to fail, then essence and its components must be strictly separated from any kind of ontological reality. If this is not done, the principle of additive determination comes into play; and the principle of being which is "existence," having no specifying function and yet translating the fully determinate into existence, becomes an unintelligible aspect of the analysis. If, then, existence is not strictly disjoined from essence the "real distinction" between essence and existence fails.

In Thomistic metaphysics "essence" and "existence" are strictly dis-

joined. Hence, we turn to our second alternative. If essence and existence mark a real distinction, we had said, then essence and its components—matter, form, and accident—lose their ontological relevance, and the analysis becomes unintelligible. The very difficulty in finding an ontological interpretation for “essence” strongly suggests its complete disjunction from existence. Nowhere, for example, can one find in Thomas Aquinas, or his followers, an ascription to essence of greater actuality than form possesses, as form is granted greater actuality than matter. As an *ens rationis* I can understand the meaning of the term “essence”: “that by virtue of which the intellect understands that which is necessarily and primarily the being of a nature or substance.”⁴ As an element of ontology I probably fail to understand it. If as an element of ontology, “essence” is to comprehend both matter and form I can understand this to mean nothing more than the sum of intelligible marks which belong to some instance of first substance. But these characteristics have already been admitted to the analysis without mentioning the term “essence.” If, as seems to be the case, no added determination is to be found in “essence” which is not already present in the composition of form and matter, the term is strictly repetitive and betrays itself as the kind of echo which one would expect in intellection among the items which properly belong to *entia rationis*.

Suppose we first accept essence as *ens rationis* and then project it ontologically. If “essence” can be thus projected, it would be a determinate but abstract possibility, somehow real and yet awaiting the influx of existence. But note the consequences of this move. We were able to understand “essence” ontologically as the set of intelligible marks belonging to any instance of first substance. And these characteristics we found to be contributed by matter, form, and accident. If I am not mistaken, our second alternative draws these latter principles of being into the abstract possibility which is all we were able to understand by an essence which is lacking in existence. They become abstract components of an abstract essence—partial essences, if you will. If we separate essence from existence, we separate the components of essence as well. And when we do so the properties which had been granted to matter, form, and accident become completely mystifying. We can no longer speak of the activity of form compared to the passivity of matter; the actuality of form compared to the potentiality of matter; or the ordering to three dimen-

⁴Thomas Aquinas, *Concerning Being and Essence*, trans. George G. Leckie (New York: D. Appleton-Century Co., 1937), p. 44.

⁵Etienne Gilson, *Being and Some Philosophers*, p. 169.

⁶*Existence and the Existent*, p. 45.

⁷*Ibid.*

⁸*Being and Some Philosophers*, p. 170.

sions of signate matter. And prime matter, which has no intelligible characteristics, would seem to have disappeared altogether. That is to say, in this alternative we lose the presumption of a graded reality extending from potentiality to actuality, and the principle of additive determination gives way to a principle of participation. The alternative before us can be exemplified in a figure, but it is necessary to point out that while Aquinas has used language proper to this figure, Gilson has explicitly denied the appropriateness of the figure itself: "... the proper receiver of existence," writes Gilson, "is not ... a 'container' into which existence has but to flow in order to make it be."⁵ Even so, in attempting to picture our present alternative I find myself transported in imagination to the sample room of the American Can Company with its variety of containers of every size and shape, the essences which are to gain existence. One can almost hear the splash of liquid being (I do not insist upon the adjective, but flowing metaphors are often employed in descriptions of this *esse*) as each container is filled to its proper measure. The principle of participation may be stated thus: It is "existence" which gives existence; the degree of actuality of any principle of being depends upon its proximity to pure actuality. This seems to me the principle, capable of explicating the notion of "perfections," more lavishly distributed as the forms approach pure actuality. If the former principle of additive determination provides an upward grading from potentiality toward actuality, this principle yields, rather, a downward grading.

I may have been mistaken in thinking of the ontological essence as an abstract possibility; but more than one Thomistic expression suggests this interpretation. Maritain tells us that "... the very intelligibility of essences is a certain kind of ability to exist."⁶ And in reference to the participation of the act of existence we are told that it is

... diversified according to the *possibilities* of existing. In relation to it those very possibilities of existing, the essences, are knowable or intelligible. Made real by the act of existing—that is to say, placed outside the state of simple possibility—they are really distinct from it as potency is really distinct from the act that actuates it. . . .⁷

And when Gilson writes, "If form still requires and still has to receive a complement of actuality, that complementary actuality cannot belong in the order of formal actuality, but it belongs in an altogether different order, that of existential actuality,"⁸ what he calls "formal actuality" would appear to be our abstract possibility.

Such language tends to support the figure I have used, suggesting a mode of ontological possibility. And yet, although I would welcome such a mode, and whatever this language may mean, it cannot be so for

Thomism. After denying the appropriateness of our figure Gilson had continued: "So long as there is no existence, there is no receptacle to receive it."⁹ Whatever may be said, if essences are to be retained as ontological possibilities, they must be granted a "place" within the set of basic distinctions which compose the structure of the system. And I, at least, fail to discover this "place." One is able to find logical possibility among the *entia rationis*; one finds a limited potentiality within first substances; I think one does not find a meaning for possibility which would allow the reality of an essence which is to become existent.

And if at last the metaphysical structure of Thomism cannot support the reality of essence, it will be "existence" which gives existence in every sense of the word. There will be no essences, forms of definiteness, outside existence capable of impeding, of forming, this flow of being. In short, the containers of my figure shall have disappeared. And the extended figure transports me out of the sample room once again, and I am left with a fact of existence, and a void. Essence, in losing its ontological position, must be withdrawn into the *entia rationis* and the components of essence as well. And if matter, form, and accident are not to have ontological status, they may remain in concept, but to what can they refer? They begin to refer only to each other; and this is to be expected of *entia rationis*. In this extension of our second alternative the graded reality from potentiality to actuality is equally lost, and the subtle distinctions of the metaphysical analysis again become unintelligible.

In sum, my argument comes to this: If essence and existence cannot be disjoined, "existence" becomes unintelligible as a separate principle of being. And if essence and existence are disjunct, both essence and its components lose their efficacy as principles of being contributing to the ontological analysis. In adopting one alternative we lose "existence;" in adopting the other we lose "essence." And we can retain both "essence" and "existence" only through revision of the system itself.

Possibly this conclusion can be denied through the introduction of distinctions which would radically change the relations with which we have been concerned. Indeed, I rather expect, and in a sense hope, that this is so. One might follow the suggestion of Gilson and consider the principles of being as relating to different orders of being. But this additional alternative likewise contains the problem which we have treated. When the principles of these orders are other than existent individuals, how are they different from distinctions of reason? However much the analysis might gain in adequacy and subtlety, unless the basic metaphysical structure of the system is revised, I would expect continued

⁹*Ibid.*, p. 169.

difficulty from three sources. (1) Two principles of explanation—additive determination and participation—are at work within the system, and they are not entirely consonant. (2) The unusual, and severe, separation of “existence” from other principles of being affects their functioning negatively in the total metaphysical analysis. (3) The compression of the modes of potentiality, actuality, and necessity into an essentially vertical gradient is virtually a compression of the modes of being into the single mode of existence; the metaphysical explanation may pose fewer problems if these modes are extended along a horizontal axis, allowing their partial identification with the modes of time.

The Real Distinction: Reply to Professor Reese

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I

THE BASIC PROBLEMS

One way of attempting to reply to the difficulties ably raised by Professor Reese would be to regard this after the fashion of a Scholastic disputation, using exclusively the language of the schools and not venturing beyond the special problematic of the schools. The characteristic debates between Thomists and Suarezians exemplify this pattern. In such an approach, a background of certain commonly held doctrines is assumed, and the limits of the problematic are set by this background. A great part of the relevant evidence in a debate of this kind consists in textual citations.

For a number of reasons I think an attempted answer along these lines would be inappropriate and less than fruitful in the present situation. Even in more appropriate circumstances, I suspect that the value of such a method of disputation is severely limited. The present dialogue is not an argument within the Thomistic, or even the Scholastic, family. The problems Professor Reese is raising are not predicated upon any special Scholastic commitment but solely upon a genuine concern for metaphysical truth, wherever it may be found. The basic questions to which the Thomistic "real distinction" is proposed as an answer must be faced by any metaphysician in any age. Since the nature of these questions is not always as clear in a dialogue which remains within the restricted area of a single system and philosophical language, I would like to go far afield—as far as the ancients in one direction of time and Alfred North Whitehead in the other.

The doctrine of the real distinction of essence and existence originates as one way of trying to answer the ancient riddle of the One and the Many. There is, of course, one answer, that of Parmenides of Elea, which simply denies the Many and asserts only a single, univocally understood homogeneous Being. For those who feel that this does violence to our experience of a differentiated and dynamically interrelated multiplicity, the task is to explain how, and in what ways, being admits of difference. This question in turn breaks down into others. Does being admit of essentially

or formally differentiated beings, or only of differences which are "material"—that is, extraformal? Or perhaps both types of differentiation can be found in reality. The specific question which bears most directly upon our problem of the real distinction is how the many beings of pluralistic theory can be differentiated in their very *existence*. This latter question is ambiguous and resolves into two quite different, though related, ones. First, what is it that distinguishes the existent from the utterly unreal? Is it form, matter, or both together? (These terms need not be given a strict Aristotelian meaning, since analogues to them can be found in other systems.) Or perhaps none of these alternatives can qualify for the function of existential *actuation*.

The second form of the question is that of existential *separation*. Could there be a plurality of separately existing entities without *intrinsic* metaphysical composition in each of them—or, at least, all but one? In the absence of such intrinsic composition, would the assertion of some completely *extrinsic* principle of limitation suffice, lying wholly outside of being, by which the existence of each could meaningfully be distinguished and marked off from the existence of the others? Or, could there be a plurality of existents each metaphysically incomposite and yet not separated in their existence from one another by anything outside of themselves, but each distinct by virtue of their simple being alone? There is, I think, no further alternative here. I do not regard it as meaningful to assert that many beings could exist separately, in some sense, from one another with nothing either within their being or outside of it to account for their separate and manifold existence.

The family of questions bearing upon existential separation can be expanded further in the direction of more specific problems. If one maintains that there could exist *many* entities utterly simple and incomposite from the standpoint of metaphysical analysis, could their existential distinction be the function of either form identified with existence or of matter so identified? Can existence of itself admit of either formal or material differentiation unless it is a principle really distinct from each? Or, to approach the problem from another angle, if one admits a plurality of existents either formally or materially (or both) distinguished from one another, can these kinds of differentiation in reality be finally intelligible without a composition within the things so differentiated of existence and essence?

II

TYPES OF METAPHYSICAL PLURALISM

Let us return now to the initial question raised, Does being admit of *essential* differentiation? I think it can be shown that, depending upon

the answer given this question, there are only four main pluralistic alternatives to Eleatic monism. If there is a many, the many beings will either be essentially one but differing only by a principle other than essence, or they will admit of essential differences in their very being. In either case, two further dialectical alternatives manifest themselves, each of which can be illustrated by historical positions. Any pluralism which holds a unitary essence for all beings must differentiate them by

¹In this doctrinal family, the internality of "matter" (as the Receptacle or Creativity) to being is not according to an Aristotelian ratio of *potency* to act. Rather, the relationship of this kind of "relative nonbeing" to the formal or essential principle of act is one of contrariety. It is, basically, the kind of opposition between the aspect of an entity which is its participation in essential unity and indivision, and that other aspect by which it is what it is only in relation to others. In the latter aspect it exists not as something in itself and by itself but only in another—in a defining context of relationship to others. Being, in Plato, is the union of both factors, so that the nonbeing which exists as intrinsic to being is not opposed to *being*, but it is other than the essential principle of unity which alone can constitute an entity which possesses an aspect of its being which is incommunicable to others, which is its own, and which cannot be divided, parcelled out, or endlessly dispersed in dependent relationships. Plato's relative nonbeing, therefore, effects differentiation. Difference is always a *relation to another*. No being, considered as isolated and cutoff from relationships of action and passion to others, can be judged as different, or even as self-same, or even as being.

Such a principle of differentiation limits, therefore, by way of *negation*—a negation which is at once responsible both for the *chorismos* between the many things and their essence, and also for the possibility of participation of a many in the one. By way of defective imitation and imaging. In Plato even the Forms are only images of their essence. Unity, and sensibles are only moving shadows in time and space of the Forms.

But how is it justifiable to include Whitehead as a representative of this type of pluralism. There are certainly difficulties, and one must beware of any system of classification becoming a Procrustean bed. For one thing, Whitehead does not assert explicitly the transcendental primacy of the One as a principle of essence. But it is necessary to include him in the class of those who hold a unitary essence for all beings in the sense that Whitehead is explicitly committed to the univocity and generic continuity of all being.

Another difficulty stems from the fact that Whitehead attempts to overcome the full Platonic *chorismos* or separation of "eternal objects" from the temporal flux of actual entities. But even here the role of "Creativity," the ultimate substrate of process, is to effect the decisions which constitute actual entities through *negative* prehensions. The decisions between possibles which precipitate facts involve negation and exclusion; and the "atomicity" of the world—the existential distinction between actual entities—fundamentally depends upon this. There is, furthermore, in both Plato and Whitehead, a sense in which 'matter' is a root source of real, surd irrationality, which cannot be *completely* ordered or unified in terms of formal or essential intelligibility. Ultimately, this implies that the differences of things, no matter how far they may be rationalized by an organon fundamentally mathematical, remain finally mysterious and inexplicable. The negations which constitute the separate existence of actual entities can neither be rendered finally intelligible by form nor by existence as a principle of actuality superior to form.

something extrinsic to essence, which may for this reason be denominated "nonbeing." This nonbeing may be either absolute, as falling outside being altogether (although still mysteriously existing), or only relative, as included within the domain of being as a kind of material substrate other than essence. But in either case, the supreme metaphysical law for all such systems is the Spinozistic maxim that all determination is negation. A primary historical example of the first position is the classical atomism of Leucippus and Democritus. Being is equated with the full, and nonbeing with its opposite, the empty and void. It is the latter, a principle falling altogether outside of being, which is responsible for the separateness in existence of the atoms, which in themselves do not differ at all. Even their sizes, shapes, and relative positions are functions of their extrinsic limitation by the void, and it is their separation from one another by the void which constitutes them as an infinite multitude.

The primary historical examples of the second type of pluralism, which founds existential separation of the many upon reception in a material substrate which is internal to being but distinct from essence or form, are Plato and Alfred North Whitehead.¹

There are also two species of pluralism which hold that being manifests essentially different kinds. The first variety holds that there are at least some entities which are metaphysically incomposite, like the atoms of Democritus, but differing not by some wholly extrinsic principle but in their very being itself. Being in each is simple, subsisting *form*. The Plato of the early dialogues held such a doctrine, although he later abandoned it for reasons we will touch upon shortly. In a crude version, something like this seems to have been held in the naive materialistic pluralism of Empedocles and Anaxagoras. In a much more sophisticated development, we find what seems to be this position in the Aristotle of Book Lambda of the *Metaphysics*, who holds a plurality of some fifty-five of forty-seven separated substances. The number depends upon astronomical exigencies, since these are the unmoved movers of irreducibly different celestial motions. But we are concerned here only with the metaphysical exigencies, with the consequences of asserting, for whatever reason, a plurality of simple beings separated not by the void but in being, identified in each with form. There is, in Aristotle, no question of a real distinction of essence and existence. The essence of each of the separated substances is pure form alone, unreceived in matter and incapable of such reception. In Aristotelian metaphysics, form is the highest principle of act; and there is no higher principle, really distinct from it, to which it can be ordered as a receptive potency. A plurality of subsisting forms, therefore, demands that such "beings" be completely and totally diverse and separated, with no commonness or community of being, either

univocal or analogical. As I have pointed out in another article,² not even *pros hen* equivocity can found a common meaning for the name "being" as applied to all of them. They can in no way be related to one another; and even the *pros hen* equivocity which, lacking an adequate doctrine of the analogy of being, is presumed to metaphysically unify the manifold of sensible substances, is reduced to final incoherence. Instead of all things being unified by a common reference to the *one* being *qua* being of the unmoved movers, the reference is rather to a sheer *many* denominated as "beings" solely by chance equivocity. This seems an inexorable dialectical consequence of the third type of metaphysical pluralism. They can neither be significantly related to one another, nor can anything else postulated as existing in an inferior mode be related to them.

We come now to the fourth and final type of pluralism, which admits of essential differences among beings but does so in terms of metaphysical composition in finite beings of really distinct principles of essence and existence. It is only in this type of pluralism that a properly *analogical* community of being can be realized, which will simultaneously allow both essential differences among beings and the intelligible unity of all being.

It is important to be able to exhibit the exhaustiveness of this classification of four types of pluralism in order to show that only a real distinction of essence and existence is compatible with an essentially diversified reality which possesses a true analogical unity. That a division between theories denying essential differentiation within being and those which admit it allows of no third alternative seems obvious. Further, the division between our first and second types seems exhaustive. There are really only two ways in which existential separation can be effected by a principle completely extrinsic to, and even the contrary of, essence. Either such an alien principle of negation will be wholly other than the simple beings separated by it, or it will function as an *internal* principle of otherness in composite beings, as contrary not to *being* but to the *essence* of beings. Its very contrariety to essence, in the latter case, will make the entities in which it is present deficient *appearances* or images of the Absolute, or the essential reality which beings imperfectly show forth. Such a metaphysical system always exhibits a schism or fission between appearance and reality, and there are deep affinities between the Platonisms throughout the centuries and such absolute idealists as F. H. Bradley. Concrete finite existence, in this doctrinal family, is always less than fully real.

But the division of the third and fourth types of pluralism does not seem quite so clearcut. In particular, it is not immediately clear why, if one holds for essentially differentiated entities, the only alternative to the

²L. J. Eslick, "Aristotle and the SCHOOLMAN, XXXVI (May, 1959), 279-90. Identity of Indiscernibles," THE MODERN

sheer equivocity of the third type is one positing a plurality of composite entities in which the composition is that of a real distinction of existence and essence. Why not, for example, some kind of universal hylemorphism, or matter-form composition, at least in all entities save one? There have been in history numerous instances of such a position, particularly in the Augustinian doctrinal complex of the thirteenth century.

In answer to this question, I think it can be shown first that such a hylemorphism, excluding a real distinction, makes essence (and, in the case of composite essence, form in essence) the supreme principle of existential actuation. It cannot simultaneously admit of essence as a principle of differentiation in being without falling ultimately into the sheer equivocity which is the fate of "being" as ascribed to the Aristotelian unmoved movers. Nor is this merely the consequence of asserting, for whatever reasons, a *plurality* of simple immaterial entities, each completely different in essence and hence in being. The effort to escape such sheer equivocity by recourse to a universal hylemorphism in all entities save *one*, without admitting a real distinction of essence and *esse*, can only metaphysically unify such entities by Aristotelian *pros hen* equivocity. This is the so-called "analogy" of extrinsic attribution of the Schoolmen, involving a reference of the secondary analogates to the primary one. Only the latter, in this case, can be *being* in a proper and intrinsic way; and all others, flawed by matter, will be called "beings" only by extrinsic denomination and will be something less than fully real. The result is once again, as in the second type of pluralism, a schism between appearance and reality. In this latter case, essential differentiation within true and integral *being*, the "really real," is denied and pertains only to the shadowy realm of appearances.

III

DECISION BETWEEN THE TYPES OF PLURALISM

We have just seen that if form is the highest principle of metaphysical actuation, then "being" is determined in meaning either to univocity, with no essential differentiation, or to sheer equivocity, as in the third type of pluralism. This third type can, therefore, be regarded as eliminated, since it destroys all unity of meaning for the term "being." Insofar as form actuates, it can only be in an order of univocal intelligibility, of essence. Existential *separation*, in a universe where being is univocal or generic, will be the function not of essence but of a principle of differentiation lying wholly outside of essence. But will it also lie wholly outside of being? This is the answer of the first type of pluralism.

It is Plato who first provides the decisive grounds for the rejection of

this first type. The question Plato seems to have asked himself, in his last period, is whether or not it is possible to have a plurality of simple, incomposite entities, really related to one another and really differentiated from one another. The principle of differentiation and relationship would not, for such hypothetical simple units, be located *in them*. Their relationships would, as the idealists of the Bradley tradition put it, be wholly external. Plato seems to have seen as clearly as Bradley that such relations could not relate and that, indeed, their very extrinsicism from the being of the terms supposedly related by them logically demanded an infinite regress of relations by which relations are related to their terms. Clearly, the force of the difficulty bears against the atoms of Leucippus and Democritus; but it bears also against the earlier theory of simple, indivisible Forms themselves. It is equally destructive, although in different ways, of both the first and the third pluralistic types. Plato's own earlier theory of simple Forms had offered no account of their inter-relationship or interparticipation, and in principle could not do so. The atomists had attempted such an account, but it was doomed to failure. Beings cannot be really related by a principle which is the contrary of being, as the void is the contrary of the full. The void of the atomists is precisely that *absolute* nonbeing whose existence cannot be significantly asserted, as Plato, the Eleatic Stranger, tells us in the *Sophist*. Relationship (and hence differentiation), if it is to be real, must be somehow internal to beings themselves—must be constitutive, in some sense, of their very reality. Unless relation and difference can be intrinsic to being there is no possibility of a real community of many ordered beings.

On the other hand, Plato also felt that if relation and difference enter into the very *essence* of such beings—of that aspect of them which is their indivisible unity, by virtue of which they enjoy a mode of existing which is not *in another*—then we are faced with a total relativism and flux. That which is *totally* constituted by relationship to others is literally nothing by itself at all. Hence, for Plato, beings must be asserted as *both* existing in themselves and in relation—in another. There will be for such entities no differentiation within essence. All differentiation will be material—will come from the side of the substrate, of the subject receiving, rather than from the side of essence. This gives rise to what I have elsewhere called the “dyadic character” of being in Plato.³ In the form-numbers of the Platonic oral teaching in the Academy there is, therefore,

³L. J. Eslick, “The Dyadic Character of Being in Plato,” *THE MODERN SCHOOLMAN*, XXXI (November, 1953), 11-18.

⁴On this point, see A. C. Pegis, “The Dilemma of Being and Unity,” *Essays in*

Thomism (New York: Sheed & Ward, 1942), pp. 151-83.

⁵*Summa contra Gentiles*, I, chap. 25, 4, trans. A. C. Pegis (New York: Image Books, 1955).

an internal composition of the One and the Indeterminate Dyad, functioning as really distinct principles. Hence, even for Plato, a plurality of differentiated entities presupposes a "real distinction," though not one of essence and existence of the Thomistic kind. It is, please note, not a matter of merely *rational* distinction at all, in terms of the exigencies of human knowledge which requires composition of some sort in the objects known.

The ultimate decision, therefore, is between the second and the fourth types of pluralism, each of which is maintaining a real distinction of metaphysical principles internal to being. In the Platonic case, such principles are related as contraries; in the fourth type existence is proportionately ordered to essence as act to potency. We have seen that in the third type *form* functioned simultaneously as the principle of existential actuation and separation. The paradox of the second (Platonic) type is that, in spite of essence (ultimately, the One) being the highest metaphysical principle, it is *matter*, defined in opposition to essence, which functions both as the principle of separation and actuation. The reason for this is clear. If the highest principle of metaphysical perfection is the One beyond being, then existence itself always entails imperfection, privation of unity.⁴ The perfection of being is its unity, which is the principle making it an *ordered* manifold; but its *existence*, as well as its multiplicity, is due, not precisely to its unity, but to its unity as received in a subject other than unity, and hence as limited to an image mode of existing. Hence, in such a system, the indeterminate material substrate, "nonbeing," in the sense of that which is other than the essence of being, both determines something to actual existence by receiving it and also pluralizes being—produces a multiplicity of things existing separately from one another.

Certainly this amounts to a recognition, in Plato and Whitehead, that actual existence is not the gift of essence and is not caused in the line of essence. In this there is agreement between the second and the fourth types of pluralism. As St. Thomas Aquinas puts it:

Again, whatever is in a genus differs in being from the other things in that genus; otherwise the genus would not be predicated of many things. But all the things that are in the same genus must agree in the quiddity of the genus, since the genus is predicated of all things in it in terms of *what* they are. In other words, the being of each thing found in a genus is outside the quiddity of the genus.⁵

This does not, of itself, establish a real distinction of essence and existence in the Thomistic sense, in which *esse* is on the side of act rather than being a receptive, limiting subject. It could be regarded as bearing primarily upon the problem of individuation, upon the *individual* existence which is

not determined in the line of essence. But it does show that actual existence cannot be understood as a univocal or formal intelligibility, although essence, as signified by the genus, is univocally intelligible—communicable to many with the same definition and meaning. The existence of John Smith and Paul Jones are simply diverse. The formal or essential intelligibility of both these individuals can be abstracted in a single univocal concept; their distinct *existences* cannot.

As A. N. Whitehead points out, there is no merely *formal* analysis of actual entities which can be, even in principle, exhaustive. Eternal objects “tell no tales” of their ingression into actual entities. Actual existence of this individual is not a *formal* determination, in the line of essence. Or, in Whiteheadian language, the “decision” which constitutes the existence of an actual entity as brute “matter of fact” cannot be accounted for merely by “eternal objects.” “*What it is to be a man*” is definable in a formula which is univocally predicable of the many individual men, if there are any; but *that* this individual man, Socrates, exists can neither be understood nor explained by that formula. No possible set of universals or forms can produce an *existing* individual or even uniquely designate one. *Existence* is not a formal attribute. This is not a matter of mere rational distinction, but rather one of really distinct principles of being.

So far, then, there is a measure of agreement between our two final contending pluralisms. But the primary difference is that actual existence, in the Platonic doctrinal family, is determined *from below* essence, rather than from above, by a decision of Whiteheadian “Creativity,” or an imaging in the Receptacle of the *Timaeus*. This would be, indeed, a decision which is extraformal (not formally specified or necessitated). But it would suppose that the source of existence itself (as a principle other than essence or form) is a kind of indeterminate subject which actualizes itself or is actualized by the removal of formal indetermination. Such a doctrine makes of *being* a kind of genus, which is subject to external differentiation by differences which are other than being—hence, nonbeing. St. Thomas, however, is firmly convinced, with Aristotle, that being cannot be a genus.⁶ If it were, the differences through which it is contracted to species would have to fall outside what is understood in the nature of the genus. No genus is included in the notion of the difference, but being is always included in the concept of the things of which it is predicated.

The function of conferring existential actuality upon essence cannot, therefore, be exercised by an indeterminate “material” principle of subjective reception or decision. Even on Platonic or Whiteheadian grounds,

⁶*Summa contra Gentiles*, I, chap. 25,

6.

⁷*Summa Theol.* I, q. 4, a. 1, obj. 3.

⁸*Ibid.*, reply to obj. 3.

conceding for the sake of argument some power of existential actuation to such a cause, it could only confer at best an unreal, appearance type of existence, in contrast with the nonexistent "Reality" of essence. There would always be some failure of embodiment, a degradation into a shadow world, in which a residual irrationality and disorder would be inseparable from concrete existence. Actual existence, from this point of view, is most imperfect, since it is that which is receptive of all perfections—all of which are in the order of forms and essence—but in itself is lacking in all. In the second variety of pluralism, the formal and essential perfections of existence are themselves nonexistent and as such cannot be integrally and properly appropriated by the existential order.

In the *Prima Pars* of the *Summa Theologiae* St. Thomas considers an objection which argues to the imperfection of God on the basis of the prior identification of the essence of God with existence itself. Existence itself, the objection urges, "seems most imperfect, since it is most universal and receptive of all modification."⁷ St. Thomas's answer to this difficulty has become famous:

Being itself is the most perfect of all things, for it is compared to all things as that which is act, for nothing has actuality except as far as it is. Hence being is the actuality of all things, even of forms themselves. Therefore it is not compared to other things as the receiver to the received, but rather as the received to the receiver. When, therefore, I speak of the being of man, or of a horse, or of anything else, being is considered as a formal principle, and as something received, and not as that to which being belongs.⁸

There is, if one likes, a kind of determination (or contraction) from below, in terms of a material principle of individuation. This is not a determination in the line of form or essence. But neither can it determine something to actual existence. A plurality of individuals within a species are only materially, not formally, different—their difference as individuals is indefinable in terms of forms alone. Forms received in a subject are individuated thereby. It is necessary, *if* the form of horse is to exist, that it be received in matter disposed in a certain way, as a body having parts outside of parts and organized for the sake of vital functions. The *individual* existence of a horse will be the function of matter. If there are finite spiritual or immaterial substances, *their* individuality will not be a material function but will be due to their essences (as simple forms) being not only unreceived in matter but incapable of such reception. In such entities, differences of individuals would indeed be equivalent to differences of species. But an *actually existing* individual, in either case, *exists* not by virtue of either matter or form.

In Whitehead, eternal objects (or forms) are determined to actual existence by a principle really distinct from themselves—Creativity, the Whiteheadian analogue to the Platonic Receptacle. To exist, in such a system, is always to exist *in another*; and hence being is univocally restricted to process. It is fundamentally adjectival rather than substantial. The principle which effects existence in Whitehead is, therefore, a limiting *subject*, in itself formally indeterminate. It effects the existence of actual entities by determining itself adjectivally, in self-decisions which are primordially grounded in a decision which orders the relevance of forms or eternal objects. Eternal objects, in themselves, are mere possibles—if even that. Forms are not, for either Whitehead or St. Thomas Aquinas, self-actualizing, or existing of themselves. Possibles are neither the ground for their own *real* possibility nor for the decision between them which is embodied in actual existence. But in Whitehead this ground or subject of existence, Creativity, is a natureless substrate which is actual only by virtue of its accidents.

St. Thomas, on the contrary, is insisting in the text quoted above that existence is a principle in the order of *act* rather than *potency* (or, one might add, to include Platonic positions, privation or “relative non-being”). The relation of existence to essence is neither that of potency to act nor that of a privative subject whose reception of essential reality degrades it to an appearance mode of existing. Existence is something received; it is not that to which existence belongs, and as received it confers integral and proper reality upon its subject. Reception of form in a subject may account for individuation. It cannot account for the actual existence of any individual subject. The material substrate of becoming, however conceived (whether as a potentiality for substantial existence or a relative nonbeing), cannot simultaneously function as material indetermination and potency in relation to form as act, and *also* as the principle which confers actuality upon forms in the order of existence. Neither form nor matter, separately or in conjunction, can exercise the function of existential act.

Existential *actuation*, in a universe where being is analogical, is the function not of essence but of a principle of existential act really distinct from essence, though proportioned to it as act to potency. Existential *separation*, in a universe where being is analogical, is the function of essence, either as pure form (in immaterial substances) or as individuated by matter. The same principle, however, cannot have *both* functions.

The end of this paper has now been reached, and the reader has no doubt noted that I have not given explicit answers to the specific difficulties raised by Professor Reese about the “real distinction.” It would require another paper to do so, but I am convinced that before it could

profitably be undertaken, the present article had to be written first. To my mind, it is the necessary metaphysical prolegomena for such discussions.

I will only attempt, in conclusion, to make some very general observations about Reese's problems. It seems to me that Reese gets off on a false trail with the quotation from Gilson about the *synthetic* union of essence and existence. I do not think that the problem of the real distinction can be properly posed in terms of the analytic-synthetic contrast. Such a contrast does violence to a metaphysics of act and potency, and to the analogy of being. The Thomistic explanation is not in terms of a combination of two items (existence and essence) that are already there, as it were, *before* there are really existing things. There are Suarezian texts which put this non-Thomistic view so baldly; there is a sort of *act* of existence which is combined with an *act* of essence. Since both are actual, a third item (the substantial mode of *unio*) is required to glue them together. Eventually, as Vernon Bourke has commented, this "mode" comes to seem more important, as unifier, substantializer, even reifier, than the initial components of being.

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***The Meaning of Heidegger.* By Thomas Langan. New York: Columbia University Press, 1959. \$4.50.**

There is in America, among the philosophically inclined, an awakening of interest in the provocative thought of Martin Heidegger. As yet, however, the opportunities for any but the professional scholar to familiarize himself with what is basic to this thought are extremely rare. No one can make this familiarity *easy* to acquire; but, for those who are willing to make the effort, the present volume makes it *possible*. The intricacies of this thought are here set forth with as much clarity as the subject-matter allows. If the result is somewhat less than lucidly clear, the obscurity should be charged to the account of Heidegger, not to that of Dr. Langan. The latter has at least made it possible for the English-speaking philosopher to grasp the thought concealed in Heidegger's elaborate word-puzzles.

Heidegger's main concern is an ontological one; the question he asks is, "What is the Being of that which is?" This question, however, can neither be asked nor answered until we ask the more fundamental one regarding the being of man, who alone is conscious of being, and to whom, for that reason, the being of whatever else is must ultimately be related. Thus, what Heidegger does is to institute a "fundamental ontology," in which the one who questions being is questioned as to his being. The questioner questions his own being, and in so doing he questions Being itself.

Because to question Being is to "stand out" (ex-ist), both in the sense of surpassing the limitations of one's own being and in the sense of being outstanding as the sole questioner among things which are but do not question, Heidegger's thought has been called a "philosophy of existence" (not to be confused with the "existentialism" of Jean-Paul Sartre). If, however, to be fundamentally is to exist, and to exist is to be in time, historically, finitely, then the foundation of Being is to be sought in the finite, not in the infinite, the transcendent. Thus, according to Heidegger, the task of philosophy today is at once to destroy traditional metaphysics, with its insistence on a transcendent foundation of Being, and to surpass it

by bringing out the non-metaphysical truth latent in historical metaphysical positions.

This man accomplishes by "standing-in" the world of which he is both a part and a foundation, since only through him can the world have a meaning. If his relation to the world is "authentic," he will permit it to reveal the very "meaning of its being," which is but another way of describing the task of philosophy. This kind of philosophizing demands an extremely intimate relationship of Being, Thought, and Truth. Thought is not the activity of a subject with regard to a Being which is "out there;" rather it is the "thinking of Being" or Being's thinking. Truth, then, is Being revealing itself authentically in this Thought.

Such language cannot but seem vague and over complicated to those who are accustomed to a more systematic way of thinking. It is unquestionably just that, but Dr. Langan's masterful presentation permits us to see through the vagueness and the complications to the profound insights which they conceal. The author is not, however, sparing in criticizing the very inadequacies of these insights. Heidegger, he says, refuses to come to grips clearly and totally with the problems he raises, and he has so limited the perspective that some fundamental phenomena of human existence find no place in his thinking.

One suspects that, in revealing the inadequacies, not only of Heidegger's conclusions but of the very approach to which he has committed himself, Dr. Langan has done much to point up the inadequacies of any *merely* phenomenological ontology. It is true that for Heidegger Being is ultimately "mysterious," revealing itself only as "veiled," but the incomprehensibility of this "mystery" is a far-cry from the incomprehensible richness which Christian thought finds in Being. Heideggerian thought—which is ultimately pagan—finds Being incomprehensible, because man's desire to comprehend it simply cannot be satisfied. There is *nothing* to satisfy it; and mere philosophy must accept this "no-thing" (*das Nichts*) as the foundation of Being. Philosophical thinking must satisfy itself with finitude; there is nothing more; to seek more is to be untrue to philosophy, to "metaphysicize" it.

It may well be asked whether such a philosophy succeeds in answering the questions it raises. There cannot, however, be a question that in raising the questions as he does Heidegger has provided the systematic philosopher with a challenge he may not ignore.

***The Early Reception of Berkeley's Immaterialism, 1710-1733.* By Harry M. Bracken. The Hague, Martinus Nijhoff. Pp. x + 123. Paper. gld. 9.50.**

Recently John Yolton's study of how contemporary critics looked at Locke has shown the value of studying the first reactions to a major thinker. Now Professor Bracken of Iowa performs a similar service in the case of Berkeley by investigating the early appraisals of his thought. This sort of research is specially helpful in the study of Berkeley, since his standpoint was widely misunderstood by his own contemporaries, and this misunderstanding affected the emphases which he placed in his later writings. Philosophers of the stature of Hume, Kant, and Reid took him to be a skeptic or an idealist who denies bodily existents. This stereotyped view of him derived in large part from the criticism of Berkeley found in Andrew Baxter's *An Enquiry into the Nature of the Human Soul* (1733). This Scottish source is usually regarded as the first important criticism of the Irish bishop. Bracken does not deny its influence but he does show that it was built upon a steady tradition of anti-Berkeleyan writing during the years 1710-33. Baxter's views were mainly shaped by these earlier estimates, and hence a knowledge of them helps us today to understand how the common European reputation of Berkeley was formed.

This monograph patiently describes the reviews of Berkeley in the major learned journals. Apart from the *Journal littéraire*, most of the reviewers mishandled their assignment. Berkeley's immaterialism was simply too odd a doctrine for them to be able to classify in the previous pigeonholes. The best they could do was to reduce it to skepticism, solipsism (which they popularly referred to as "egomism"), and an idealism which undermines the sensible world. The only trouble was that Berkeley explicitly disavowed these positions and offered reasonable arguments against confusing his stand with them. To help us follow these early critics, Bracken adds six appendices containing the major notices on which his analysis is based and which are rarely found in libraries.

Much of the investigation centers around the reception of Berkeley in the Jesuit *Mémoires de Trévoux*. The editors were more eager to picture Berkeley as an extreme development of Malebranchism than to weigh his thought for its own sake. Their polemical intent led them to claim that Berkeley removes the basis of proof of God's existence by denying a sensible world, whereas in fact Berkeley made a certain interpretation of the sensible world and then used that interpretation in his inference to God. Another major shaper of the common image of Berkeley was

Chambers' *Cyclopaedia*, which described his work as being mainly in epistemology and as introducing God only as an afterthought. Finally, Bracken gives an analysis and criticism of Andrew Baxter's account. He notes that Baxter failed to follow the strategy of Berkeley in fusing perception with existence, as a foil to skepticism. But Baxter did raise some genuine questions, such as how we could tell whether the real world lies in your idea of it, in mine, or in God's. Perhaps Berkeley was not without resources even here, however, since he used his theory of causal participation to suggest a convergence of similar ectypal ideas upon their archetypal pattern in God's mind. This carefully constructed book brings us noticeably closer to an understanding of the attitude of Berkeley's first readers and critics.

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***Kant's Metaphysics and Theory of Science.* By Gottfried Martin.
Translated from the German by P. G. Lucas. Manchester University
Press, 1955. Pp. viii + 206, with notes and index. Cloth, 21 shillings.**

Kant's *Critique of Pure Reason* is fed by two great streams, the new natural science and "the old ontology." In this work Gottfried Martin, Professor of Philosophy in Mainz, explores the regions in which they flow together. The book opens with a *resume* of Leibniz. Then it has two main divisions, "Unity" and "Being." In the first division, which covers the principal ways of conceiving Nature and Unity from Greek times to the present, Martin takes a long look at Kant's estimate of Newtonian science. He discusses Space, Time, the nature of mathematics, *a priori* knowledge, and the general problem of antinomies in philosophy. Under "Being" he discusses, along with the concept of Being from Plato on, the several kinds of beings important in Kantian thought: God, the acting and thinking subject, appearances, and things-in-themselves. The discussions are wonderfully unhurried considering their breadth of reference, and done with such skill that the reader is many times called back for a second look at some luminous exposition or explanation.

In these discussions all roads lead back to the *Critique of Pure Reason*. Martin's deep feeling for Kantian problems and devotion to the *Critique* underlie the merits of his book and are perhaps accountable for its difficulties as well. Our difficulty concerns the distinction between objects-as-appearance and things-in-themselves, now as always the number one trouble for Kant's readers. Martin calls the idea of a thing-in-itself "problematic." That is, we are in no way forced to posit a hidden substrate for every ordinary object. For Kant's purposes, according to Martin, we

need only say it is possible. If we do, then God, Freedom, and Immortality, ruled out of scientific discourse by the *Critique*, can come back in where we need them most. Whenever a Kantian argument turns on the admissibility of things-in-themselves, Martin warns the reader again of their questionable status. However, he allows their correlates, objects-as-appearance, to remain pretty well above suspicion. This is hard to understand. The problem of the aporiae is whether or not it makes sense to talk about things of which nothing can be safely said, and which Kant posits only in opposition to objects-as-appearance. We should thus expect a twin problem: whether or not it makes sense to talk about objects-as-appearance considered as correlates of things-in-themselves. Since the Kantian system, taken as a total way of speaking about human knowledge, depends on keeping both sides of this distinction, it is strange to find Martin warning us that the heads of the coin may be counterfeit, yet proceeding for the most part as if the tails were good money.

Martin has an eye for threads that run through all the ages of philosophy. Making every allowance for this gift, it is still surprising to hear that Leibniz and Kant are "in unbroken continuity with Scholasticism" (118, 169). The mainstream of Scholasticism acknowledges a world of perceptible objects standing over against us with intractable ways of their own; for Leibniz this world is unanalyzed thoughts, and for Kant, in so far as we can know it, mere appearances, with no existence independent of human thoughts. Hasn't a thread snapped here? On a related point, Martin sees no way around the 'limitation'—to use his soft word—which the mathematical antinomies place upon metaphysics. For Aristotle and Aquinas, as he notes, the impossibility of an actual infinite is decisive for questions about infinity in the physical order. It is natural to wonder, then, how the possibility of an actual infinite made its comeback. There are other broken threads. Wherever, in fact, Martin speaks of "the old ontology" as a source of Kant's thought, the reader will do well to ask whether it is not actually the newer, Leibnizian ontology, with its troubled half-way view of the status of nature, that is the feeder.

Though modestly conceived as just "a new sign of the inexhaustible depth of Kantian thought," this is a book rich in learning and suggestion, filled with illuminating asides on nearly every turn of western thought. In passing it provides a brimming little conspectus of neo-Kantian studies and a clear picture of how the three *Critiques* are related. Mr. P. G. Lucas deserves a tribute for the lucidity and warmth of his translation.

La communication de l'être. By André Hayen, S.J. Vol. I, *La métaphysique d'un théologien.* Paris: Desclée, 1957. Pp. 189. fr. b. 120. Vol. II, *L'ordre philosophique de saint Thomas.* Paris: Desclée, 1959. Pp. 355. fr. b. 246.

These two volumes are the first of four that are to make up the study entitled *La communication de l'être*. As the title suggests, these volumes are to be a *Retractatio* in the sense of Augustine of Hayen's *L'Intentionnel dans la philosophie de saint Thomas* that appeared in 1942. Now the author is convinced that Thomistic metaphysics is not only a metaphysics of intentionality but also a metaphysics of the communication of existence. Now he perceives more clearly the close ties that link metaphysics with both history and theology. Now he maintains that the key to metaphysical reflection is, in Maréchal's phrase, the transposition of the terms of the problem, the recognition of the primacy of existence over activity.

Because Hayen agrees with M. Van Steenberghen's protest against Gilson's presenting the metaphysics of St. Thomas in the theological order, he plans to present it in the philosophical order. On this point, Hayen would go so far as to wish to entitle his own work after the manner of Spinoza: *Philosophia Sancti Thomae Ordine Philosophico Demonstrata*. Hayen's position is that theology, the science of supernatural faith, takes upon itself a genuine philosophy which is autonomous, though not independent, of theology.

The first volume, *La métaphysique d'un théologien*, begins with an explanation of the purpose of the entire project. Hayen plans to arrive at the *intentio profundior* of St. Thomas by the most exact study of the text. But since no one, not even St. Thomas, ever adequately expresses his intention, the closer one studies the text the more one understands that the intention of the author eludes him. Hayen believes that to attempt to discover the intention of St. Thomas is to enter upon metaphysical reflection. In so doing, the transition is made from the point of view of the grasp of the Absolute by the human mind to that of the grasp of the human mind by the Absolute. This is to recognize the absolute primacy of God, His love, and His supernatural revelation of impenetrable mystery. And this constitutes metaphysics, because for Hayen metaphysics is the human science of the Absolute.

Throughout the first volume the theme of the unity and distinctness of philosophy and theology predominates. The author maintains that it is impossible to understand the metaphysics of St. Thomas apart from the theology which employs it. For St. Thomas was ever a theologian. Too

often Catholic historians neglect this fact in their anxiety to meet directly the charge of critics such as Bréhier that there was no "philosophy" in the Middle Ages. But because faith is the personal commitment of the intellect to the Creator of reason, the intention of St. Thomas as a theologian requires and fosters a strictly rational reflection, an autonomous metaphysics. In the remainder of this volume Hayen shows that the metaphysics which is taken up into theology is reinforced by the light of faith without losing its own proper character. In fact, the theologian is capable of exercising more perfectly than any other the work of natural reason in metaphysical reflection.

The second volume, *L'Ordre philosophique*, describes the main characteristics of the metaphysics of St. Thomas. Hayen's major point here is that it does not consist in the elaboration of a system but in fidelity to a living tradition. But Hayen places St. Thomas not in the tradition of the Greeks and Arabians but in the tradition of St. Augustine and St. John Damascene. This fidelity to the tradition of St. Augustine consists in the elaboration of a metaphysics of creation. To indicate the intention of St. Thomas over against his expression, Hayen cites textual evidence of the shortcomings of expression in the Thomistic text.

By comparing St. Thomas with St. Anselm, the author indicates the concreteness of the metaphysical reflection of St. Thomas. And a careful analysis of the treatment of the problem of the possibility of the universe brings out the very same point. Finally, this is confirmed by a study of what St. Thomas means by *necessitas ex suppositione*. This part of the second volume shows that the metaphysics of St. Thomas is developed by elaborating conceptually the implications of concrete reality. Hayen goes on to show that this terminates beyond itself in a free assent to creative love.

In the last section Hayen discusses the philosophical order of St. Thomas under the notion of its being a Scholasticism. Here he stresses the open and dynamic nature of this philosophy which is directly related to the objective of these two volumes. For their purpose is effected if only the reader has come to the realization of the *intentio profundior* of St. Thomas, the transposition of the terms of the problem.

There is much to commend in this brilliant study. Hayen's underlining the fact that St. Thomas was a theologian is significant because this is often passed over lightly by historians of philosophy. He brings to the fore the difficult problem of the unity and distinctness of the philosophy and theology of St. Thomas. Also, the study of the development of the expression of St. Thomas presents very well the concrete orientation of St. Thomas's thought. And his reflections on the snares of Cartesianism and mathematicism that lie in wait for the overanxious teacher of philosophy

are worthy of note. As he rightly observes, Thomism is not in the manuals, such as Gredt. These elementary introductions are even necessary; but if the distinction between these and philosophy itself is neglected, students go through life thinking that there is nothing more to metaphysics than they learned in a few short years; and some go on to tell the world of scholars that Scholasticism is the set of static formulas they memorized at college or in the seminary. And perhaps teaching that regarded this distinction would be more challenging and inspiring. Though Maritain as early as 1932 in his preface to *Distinguer pour unir, ou les degrés du savoir* declared that Thomism is not a scheme of ideas patterned after a spatial or mechanical model, it is still timely for Hayen to declare that Thomism is not a closed system but that it is open and dynamic.

But for all the valuable insights, there is one basic difficulty with Hayen's position. This is his acceptance of the main tenets of Maréchal. Since Hayen's work represents the drawing out of some of the implications latent in Maréchal's position, it seems just to raise questions about its validity in the light of its development by Hayen. Though Hayen's plan to present the metaphysics of St. Thomas in the philosophical order is commendable, the question is whether the Kantian approach of the position can be reconciled with such a project. Hayen explicitly sets the intelligible over against the sensible and phenomenal. And here, too, he admits the Kantian origin of this role of the a priori in human knowledge. But this can hardly be reconciled with St. Thomas's assertions about the intelligibility of the sensible and contingent.

In this area, Hayen leans heavily on Pieper's interpretation of St. Thomas, which shows that for him created beings are completely intelligible only in the creative mind of God. But Pieper stresses at the same time the intelligibility of contingent beings for the human mind. As Pieper says "‘Intellectus . . . penetrat usque ad rei essentiam, the mind makes its way to the essence of things,’ this remains a valid proposition for St. Thomas, in spite of his assertion that the intellectual efforts of philosophers have never been able to grasp the essence of a single fly." And it is this partial but genuine grasp of the intelligibility of sensible beings that is not accounted for in Hayen's interpretation.

Furthermore, Hayen's interpretation limits Thomistic metaphysics to the context of the science of theology, just as it is as a matter of fact found in St. Thomas. But if the contingent beings of the sensible world are to some extent intelligible, then it is possible to construct a philosophy drawing its inspiration and basic approach from St. Thomas, but not in the context of the science of theology. Then metaphysics would not be the science of the Absolute, but the science of being as such.

The Living and the Dead: A Study of the Symbolic Life of Americans.

"Yankee City Series," Vol. 5. By W. Lloyd Warner. New Haven, Conn.: Yale Univ. Press, 1959. Pp. xii + 528. \$7.50.

This is the fifth and last volume in the "Yankee City Series," a group of sociological studies by W. Lloyd Warner and collaborators that were begun in 1941; it is probably the most tantalizing volume for philosophers. Throughout this series the techniques and reflective approaches developed by anthropologists for remote and primitive societies are turned on ourselves. The result in the present volume is a work which is extremely rich for an American sociological study, sparse in statistics—although there are a few charts—but rewarding in insights.

Contemporary discussions of the symbol and symbolization take place in an area where philosophy, anthropology, sociology, psychology, and language studies actively meet, and where the lines of demarcation between these subjects become very thin. The structure of this book is venturesome and masterful, carrying the reader—not without appropriate effort on his part—from the particularity of "Biggy Muldoon—a Political Hero," the first chapter of the book, to a last chapter, highly abstract and generalized, on "The Structure of Non-Rational Thought." Any adequate theoretical treatment of symbols must rest on observant and meditative familiarity with the complex facts of concrete symbolic usage—and this demands much more than the ability to wedge an occasional example into a doctrinaire discussion. Professor Warner has succeeded admirably in spanning the distance between the concrete and the abstract poles, and in doing so has brought home the fact that human activities which are ordinarily not interpreted as symbolic in cast but rather as cold, down-to-earth, matter-of-fact, businesslike, calculating, and "hard-boiled," are often performed for reasons which are highly, if not primarily, symbolic.

The author's choice of political activity as a point of departure in his consideration of symbolism is canny and effective. For in a democracy, perhaps more than in any other form of society, politics, from party convention to campaign personalities, is an elaborate traffic in symbols.

From the politics of the typical Yankee City which he is analyzing, Warner moves to a consideration of its ritualization of the past, the items in its past history which it likes to recall in its civic pageants and the ones it likes to leave out, and then on to the symbolic life of associations and the symbolic relations of the living and the dead. Here Memorial Day ceremonies and activities centering around cemeteries, together with Abraham Lincoln's curiously sacral role (the people unified in war and death) are the objects of fascinating and circumstantial study. The treat-

ment of sacred symbol systems in the next part of the book becomes more abstract, although references to concrete items in Yankee City behavior continue with fair frequency. The Protestant cult of the masculine and abstract, and its antipathy to the feminine, chthonic, or sexual in religious symbolism, is taken up in great detail; and the Catholic attitude, which incorporates both femininity and sublimated sexual symbolism into religious service, is treated even more fully.

The section on marriage and on its correlative, consecrated virginity, relies much more on Catholic belief, teaching, and behavior, than on Protestant, for the good reason that in Protestantism generally these things have much less symbolic resonance. Here the treatment of the Church and the individual soul as the bride of Christ, of the mystical marriage in the investiture of religious, of the dual role of the priest (as individual, feminine with the rest of the Church, the Bride of Christ; as an *alter Christus*, masculine), and of Mary, the Virgin Mother, is exceptionally well done. The study of the symbolic structure of the sacred year, of the liturgy in general (Dietrich von Hildebrand is among the interpreters drawn on here), and of the Sacrifice of the Mass in particular, is sensitive and profound. Writing as a sociologist, Warner makes a great many points of intense interest to theologians. All the symbolic items—Catholic, Protestant, and Jewish as well—he treats, moreover, not as separate, isolated phenomena but as integral to the Yankee City psyche, for this book is cut from the whole American cloth.

Concerning Warner's contrast between "oral Protestantism and visual Catholicism" one might suggest that, while Protestantism does typically emphasize the oral to the virtual exclusion of the visual, Catholicism is not so much purely visual as visual-and-oral, at least in principle. Its characteristic is interaction of the oral with the material visible world. The Catholic sacraments without exception have a "form" which is oral (or in the case of matrimony virtually oral), plus "matter" which is for the most part visible and tangible.

The section of this book most immediately interesting to philosophers is doubtless the last, concerned with what Warner calls "symbolic life." Here the crucial point that symbols cannot be interpreted by studying individuals in isolation is documented and reinforced in a great many ways. It is difficult to see how one person alone, outside a social context (if such a person can ever be imagined), could even devise a symbol and hence how he could think at all or come to a reflective knowledge of his own existence. From this point of view, the study of human cognition itself involves the study of sociology; and works such as Warner's, like those of anthropologists such as Malinowski and of linguists such as Sapir or Whorf, constitute philosophical source books.

PLATO'S LATER DIALECTIC

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The dialectic of collection and division occupies a large and central position in the later dialogues of Plato. There can be little doubt that Plato considered this new method of defining as radically new and important since he patiently devotes lengthy sections of the *Sophist*, *Politicus*, and *Philebus* to the exemplification of the methodology underlying division. In spite of this obvious emphasis and the eminent position of this new dialectic in the later dialogues, Platonic scholars are by no means of one mind regarding its interpretation and philosophical significance in the dialogues.

VARIOUS INTERPRETATIONS

Any complete review of the literature on the topic is a subject for a much more pretentious work than this paper, but a brief survey of some of the modern Platonic critics does not seem out of place and will perhaps help to bring the problem of the later dialectic into focus. Certainly the least flattering of the commentators on the method of division are those who see it as a boring exercise in logic that Plato emphasized because of its novelty for him, though for the modern logician it cannot be more than childish. Such seems to be the view taken by Julius Stenzel in his essays on the Platonic dialectic.¹ Stenzel realizes that division is a matter of great significance in Plato's later thought and goes so far as to claim that Socrates did not discover the definition in order to allow some claim to originality for the method of division. Stenzel sees that division and nonbeing present real innovation in Platonic thought, but he does not see that this is any more than the evolution of the "concept" and the logical mode of defining through

differences until an ultimate "atomic form" is reached.² A. E. Taylor, on the other hand, implies that there is little difference between Plato's method of division and Aristotelian definition through genus and specific difference.³ This overlooks the radical differences between the

¹*Plato's Method of Dialectic* (Oxford, 1940) pp. 121-22.

²*Ibid.*, pp. 86-95.

³"The Aristotelian rule of definition by 'genus and difference, or differences' is simply the condensation of this Academic method into a formula . . ." (*Plato: The Man and His Work* [London, 1929], p. 377).

⁴"We must also be careful not to make the mistake of taking the proposed definition of 'being' as 'force' for one seriously intended by Plato. It is given simply as one which the materialist could be led to concede if he were willing to reflect, and we are warned that, on further consideration, we might think better of it. The point is simply that the materialist who uses the notion of a 'force' has already surrendered his materialism" (*ibid.*, pp. 384-85).

F. M. Cornford also rejects Plato's words as a definition of being. "Plato has certainly not committed himself here to a 'definition of being'. So much could be discovered from an accurate translation; but the word 'power' still needs to be explained. It has been rendered by 'potency', 'force', 'Möglichkeit', 'puissance de relation'. Without some account of the history of the word *dynamis* in Plato's time and earlier, the student accustomed to the terms of modern philosophy may well carry away a false impression" (*Plato's Theory of Knowledge* [New York, 1957], pp. vii-viii).

Certainly, *dynamis* is not "force," as Taylor seems to say; and there is need to determine the precise meaning of the word in Plato's time and earlier. Whether there is here question of a definition of being or merely of a mark or characteristic does not seem as important as the determination of the meaning of "power" in the text of Plato. Cornford here criticizes the interpretation of the text in question by A. N. Whitehead as unscholarly; this interpretation of the later dialogues and of the text in question

—unintentionally, of course—points up the community of philosophic spirit between Plato and Whitehead that the latter always proudly acknowledged.

⁵Paul Shorey is certainly among the staunchest defenders of the unity and continuity of Plato's thought (*What Plato Said* [Chicago, 1934], pp. v-vi). Raphael Demos shows fine insight into the subtleties of Platonic thought but seems to suppose by his method of approach to the dialogues a uniform progression of thought from the earliest to the late dialogues (*The Philosophy of Plato* [New York, 1939]). A. Wedberg also seems to suppose an identification of the dialectic of the good and the dialectic of collection and division. His book, of course, does not explicitly treat of the problem of knowledge; but when he does speak of dialectic, it is of the dialectic of essence that is the fond hope of the *Republic* (*Plato's Philosophy of Mathematics* [Stockholm, 1955], p. 44). Cf. also W. D. Ross, *Plato's Theory of Ideas* (Oxford, 1951) and R. Loriaux, *L'être et la forme selon Platon* (Paris, 1955).

⁶Ross does not understand the criticism of the early theory of Ideas as being seriously meant; it is rather the wording of the earlier presentation that must be corrected (*Plato's Theory of Ideas*, pp. 87-88). The *Parmenides* and *Theaetetus* are not then, according to Ross, dialogues of crisis but are rather manifesting Plato's new interest in Eleaticism and a strong, if negative, argument for the existence of the Ideas (*ibid.*, pp. 83 and 103).

R. Loriaux considers the Platonic dialectic as having developed in a twofold movement, the ascending dialectic and the descending dialectic. In the exposition of the twofold dialectic, however, Plato first completed the ascending dialectic and then began the development of the descending movement. Thus the exposition of the *Sophist* completes the early dialogues en

Platonic and the Aristotelian definition along with their metaphysical implications and certainly underplays the significance of the Aristotelian critique of Platonic division. Taylor also finds the definition of being as power in the *Sophist* as merely provisional and not to be taken seriously; this I believe is a serious oversight, since the definition of being as power and the method of division mutually imply one another, so that the one without the other is unintelligible.⁴

Other commentators claim a stricter unity for Plato's thought and excluded the possibility of a radically new dialectic; these are the "friends of the Forms" who cling to the ideal of knowledge that is presented in the early and middle dialogues and reaches its climax in the *Republic*. Such commentators include Paul Shorey, Raphael Demos, W. D. Ross, and R. Loriaux.⁵ Certainly, the *Republic* does present an a-priori ideal of "synoptic" and deductive science that is re-echoed by the rationalists of the seventeenth century; but it is questionable that this ideal of knowledge represents Plato's last word on the matter. I hope to show that it was not. W. D. Ross and R. Loriaux do not see the *Theaetetus* and *Parmenides* as dialogues of real crisis for the early theory of Forms and consequently fail to see the radical change in the theory of Forms implied by the introduction of nonbeing and the method of division.⁶ Similarly A. Diès vigorously maintains that the *Sophist* does not represent any radical change in the theory of Forms and that the definition of being as power is no more than a middle term in the argument, merely provisional and certainly not seriously intended.⁷ Finally, William F. Lynch's study of

tachant de fournir une réponse aux problèmes nouveaux sur lesquels la dialectique descendante a attiré l'attention (L'être et la forme, p. 161). The whole long exposition adds little or nothing to the development of the Platonic system (*ibid.*, 141).

Similarly R. E. Cushman sees the dialectic of the *Republic* as the movement of ascent. "The upward course represents the 'metaphysical' movement of Plato's thought which remains to the end integral with the whole" (*Therapeia: Plato's Conception of*

Philosophy [Chapel Hill, 1958], p. 117). The method of division is "a methodology for stabilizing empirical knowledge by supplying a way (*methodos*) to differentiate haphazard from critical observation" (*ibid.*). Thus the Platonic refusal to find intelligibility in the sensible world is smoothed over, and the permanence of the dialectic of essence of the *Republic* is staunchly maintained.

⁷*La définition de l'être et la nature dans le Sophiste de Platon* (Paris, 1932), p. v.

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the *Parmenides*, in which he claims to have discovered a systematic and ordered exposition of Platonic metaphysics, supposes a uniformity of the theory of Ideas and remains oblivious of the implications of the criticism of the early form of the theory in the *Theaetetus* and *Par-*

⁸*An Approach to the Metaphysics of Plato through the Parmenides* (Washington, D.C., 1959). Father Lynch claims that the *Parmenides* "could . . . be taken as a kind of textbook summary of Plato's metaphysics, presented in a comprehensive and ordered way, unlike any of the other dialogues" (*ibid.*, p. vii). This conclusion seems unwarranted especially in view of what is to follow in the *Sophist*, where *Parmenides* must be slain in order that nonbeing might be introduced; if Plato had already introduced nonbeing in the *Parmenides*, then the parricide of the *Sophist* is meaningless. Lynch, nonetheless, maintains that the doctrine of nonbeing, which he considers a form, is anticipated in the hypotheses of the *Parmenides* (*ibid.*, pp. 199-200). Thus Lynch not only maintains a unity of Platonic thought but goes so far as to maintain that a single one of the late dialogues is the key to the systematic interpretation of the whole of Plato's thought.

⁹The period of historical studies which assumed that since Kant and Plato were both great philosophers, their approach toward the study of philosophy was the same and yielded the same conclusions is generally a thing of the past; though there are today scholars who read into Plato everything from an analogy of being to a Protestant existentialism, there are many more studies that are concerned with what Plato really meant and could mean in his historical situation.

¹⁰Ross gives the chronological ordering of the dialogues according to Arnim, Lutoslawski, Raeder, Ritter, and Wilamowitz. In general there is much disagreement between the five scholars about the order of the early dialogues; however, "as regards the later dialogues, from the *Republic* onwards, there is almost complete agreement" (Ross,

Plato's Theory of Ideas, p. 2). This is not to say, however, that all scholars agree about the dates of the later dialogues; but this is a problem to handle later.

¹¹The writings of H. Cherniss have vigorously argued against the use of the Aristotelian criticism of Plato, and Cherniss has even gone so far as to claim that Plato had no "oral teaching" and that "Plato did not expound any physics or natural philosophy beyond that which he wrote in the *Timaeus* . . ." (*The Riddle of the Early Academy* [Berkeley, 1945], p. 72). W. D. Ross argues to the contrary that Plato did give some oral instruction in philosophy and that the Aristotelian criticism of Plato may be accepted with caution (*Plato's Theory of Ideas*, pp. 150-51). Father Leo B. Kaufmann, S.J., examines the possibility of using the Aristotelian critiques; while recognizing the difficulties of Platonic scholarship in this area, he argues that there is little or no reason to suppose that Aristotle is deliberately misinterpreting the teaching of his master and that there is every reason to suppose that Aristotle fully understood the thought of Plato as it had developed during the last twenty years of Plato's life—the period of the later dialogues and of Aristotle's stay in the Academy. Furthermore, there are sound textual grounds for arguing that Plato placed little value on, and confidence in, the power of the written word as a means of communication of knowledge; this, of course, would emphasize the importance of any record of the oral teaching. If this record is the critique of as brilliant a philosopher as Aristotle, who studied with Plato for twenty years, then the importance of the Aristotelian report of the oral teaching becomes very great. Cf. "Predication and Reality in Plato" (unpublished Ph.D. dissertation, Dept. of Philosophy, Saint Louis University, 1957),

menides and of the resolute function of the *Sophist* regarding the difficulties raised in the two previous dialogues.⁸

A QUESTION OF METHOD

The most important decision to be made in a study of Plato is a question of method. Contemporary scholarship has generally progressed beyond the nineteenth-century Kantian and Hegelian interpretations of the dialogues and has made genuine progress toward an objective historical study of the Platonic texts.⁹ The chronology of the dialogues has been carefully determined and generally agreed upon;¹⁰ many authors even admit the use of the Aristotelian critique of Plato and Platonism as a confirmation of their interpretation of the text.¹¹ Unfortunately the basic continuity of Plato's thought has remained the assumption of most scholars. Treatments of the dialogues tend to focus about the ideal of knowledge proposed in the *Republic* and assume that this remains the unchallenged ideal throughout the later dialogues. It is on the basis of such an assumption that one can speak of the metaphysics of Plato as though one can legitimately move back and forth from the *Phaedo* and the *Republic* to the *Theaetetus* and the *Sophist* without confusing radically different approaches to reality. It is on the basis of a similar assumption that one can understand the dialectic of the Good that is the glory and grandeur of the *Republic* as the ascending moment of the same dialectic of which collection and division represents the descending moment.

The order and dating of the dialogues is of the utmost importance for understanding the significance of the later dialectic. I believe that Taylor is basically correct in allowing for a silent period of almost twenty years in Plato's life from the end of the writing of the *Republic*

p. 191. Other instances of this use of the Aristotelian texts in interpreting the later dialogues may be found in the articles of Professor Leonard J. Eslick on Plato. Cf. Eslick, "The Dyadic Character of Being in Plato," *THE MODERN*

SCHOOLMAN, XXXI (Nov., 1953), 11-18; "Plato's Dialectic of Non-Being," *New Scholasticism*, XXIX (Jan., 1955), 33-49; "Plato on Being: A Reply to Mr. Wills," *THE MODERN SCHOOLMAN*, XXXVI (Mar., 1959), 205-8.

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to the *Theaetetus*—with the exception perhaps of the *Phaedrus*.¹² I find it impossible not to take seriously the trenchant criticism of the theory of Ideas in the *Theaetetus* and the *Parmenides*, and find it incredible that this criticism was uttered within a few years of the writing of the *Republic*—not so much because I find it impossible that Plato could immediately criticize his own work, but because I find it incredible that Plato could criticize it and immediately replace it with a far more subtle dialectic than that of the *Republic*.

¹²W. D. Ross objects to Taylor's view that it supposes that Plato had written by the age of forty all the dialogues "down to and including the *Republic*, which cover nearly 1,200 pages, and in the remaining forty years of his life dialogues covering less than 1,050; which, while not impossible, is not likely" (Ross, *Plato's Theory of Ideas*, p. 5). It seems to me to be just as unlikely that an author keep up the same pace in his writing throughout his whole life. In the case of Plato, who placed less and less confidence in the power of the written word as he grew older and who apparently radically revised his earlier position, it seems quite likely not only that the work of his later years be less voluminous but that there be a silent period of considerable length during which the elaborate revision of thought took place.

¹³Stenzel, *Plato's Method of Dialectic*, p. 81.

¹⁴*Ibid.*, pp. 79-83.

¹⁵Taylor, *Plato*, p. 300.

¹⁶The *Phaedrus* does present Socrates as a "lover of these processes of division" (*Phaedrus* 266 b). Four divisions of divine madness are made: prophecy, mystic madness, poetic madness, and the madness of love. Socrates then tells us that the long discourse on love was "as a whole, really sportive jest; but in these chance utterances were involved two principles, the essence of which it would be gratifying to learn, if art could teach it" (*ibid.*, 265 c-d). These two principles are collection and division as it is then explained: "That of perceiving and bringing together in one idea the scattered particulars, that one may make clear by definition the particular thing which he wishes to explain. . . . That of

dividing things again by classes, where the natural joints are, and not trying to break any part, after the manner of a bad carver" (*ibid.*, d-e).

There can be no doubt that this collection and division has much in common with the method of division as it is proposed in the *Sophist* and later dialogues; Socrates expresses great admiration for these divisions. "And if I think any other man is able to see things that can naturally be collected into one and divided into many, him I follow after and 'walk in his footsteps as if he were a god'" (*Sophist*, 266 b). Such Socrates has *hitherto* called dialecticians. The phrase μέγχι τοῦδε should refer to past time up to the present and hence to the dialectic of the *Republic*. Hackforth's translation here reads: "Furthermore—whether I am right or wrong in doing so, God alone knows—it is those that have this ability whom *for the present* I call dialecticians" (Plato's *Phaedrus* [Cambridge, 1952], p. 134; the italics are mine). This somewhat distorts the meaning of the phrase in question, though it does help square the text with Hackforth's claim that this is the method of division found in the *Sophist* and the later dialogues. "It is in this section that Plato for the first time formally expounds the philosophical method—the method of dialectic—which from now onwards becomes so prominent in his thought" (*ibid.*). Hackforth notes that Socrates also refers to himself as a lover of division in the *Philebus* (16 b). He sees that this is not the dialectic of the *Republic*, but something "less magnificent, but perhaps more practicable. . . . What is now contemplated is a piecemeal approach to knowledge, consisting in a

Before approaching the later dialogues one must recognize the fact that collection and division have been found in most of the early dialogues.¹³ Stenzel has shown that the mention made of division in the *Republic* is no more than verbally similar to the dialectic of the later dialogues.¹⁴ The question of the *Phaedrus*, however, is a good deal more complicated by the problem of its date of composition. Taylor places the dialogue early in the interval between the *Republic* and the *Theaetetus*, if not earlier than the *Republic*.¹⁵ I agree with Taylor, though I think the *Phaedrus* almost certainly follows the *Republic* within a few years.¹⁶

If I am correct here, one could admit that the *Phaedrus* represents a quest for a new type of knowledge—for a relational knowledge rather than a knowledge of essence. Perhaps, to add another conjecture, Plato saw the impossibility of the essential dialectic of the *Republic*

mapping out of one field after another by classification *per genera et species* which will have the effect of at once discriminating and relating these concepts or class names which express not mere subjective generalizations but the actual structure of reality" (*ibid.*, p. 136).

Hackforth dates the *Phaedrus* at about B. C. 370 and thus would place it immediately after the *Republic*, which he feels Plato wrote during the greater part of the decade 380-370. This establishes a continuity in the dialogues that is somewhat incredible; I cannot believe that there was not a rather long interval between the *Republic* and the *Theaetetus* and *Parmenides*. Just where between the *Republic* and the *Theaetetus* the *Phaedrus* should be placed remains a difficulty. I would tend to agree with Taylor that the *Phaedrus* is early rather than late in the interval. Although collection and division are mentioned and though the ideal of knowledge found in the dialectic of the Good in the *Republic* seems to be modified as Hackforth argues, nonetheless Socrates does say that it is these men whom he has hitherto called dialecticians.

Furthermore, the method of division as here proposed has much in common with the synoptic view that was the culmination of the essential dialectic of the *Republic*—as Hackforth himself admits. Plato uses *συναρᾶν* in 265 d, which is clearly reminiscent of ὁ γὰρ συνοπτικός διαλεκτικός of the *Republic* (537 c). So too in 266 b the man whom Socrates admires is one δυνατόν εἰς ἓν καὶ ἐπὶ πολλὰ πεφυκοθ' ὄρᾶν. It is not clear that this represents a radical difference from the dialectician of the *Republic*.

Personally I am inclined to consider the *Phaedrus* as transitional between the *Republic* and the later dialogues. Plato is experimenting with a dialectic that has many of the features of the method of collection and division as known in the later dialogues; but he has not yet seen the radical readjustment in his metaphysics that this dialectic of otherness will require. Stenzel also judges that the *Phaedrus* is a transitional work (*Plato's Method of Dialectic*, pp. 151-52). Kaufmann is silent about the position of the *Phaedrus* save to acknowledge Stenzel's opinion.

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within a few years after he wrote the masterpiece; he then experimented with the possibility of a relational, nonessential type of knowledge that would determine "the precise degree of resemblance and dissimilarity between this and that"¹⁷ without coming to an essential knowledge of the object. During the lengthy period from the *Phaedrus* to the *Theaetetus* Plato reformulated the theory of Ideas to conform with his new ideal of knowledge—an ideal that has never won the hearts of the "friends of the Forms," but an ideal that is humanly realizable.¹⁸

THE *THEAETETUS*

Though the method of division is not found earlier than the *Sophist* in any developed form, the intimate connection between the *Theaetetus*, *Parmenides*, and *Sophist* requires that these dialogues be seen as the context in which Plato chose to make the first full presentation of the method of collection and division. The *Theaetetus* has been dated with accuracy at 368-367 B.C., though it had once been considered an early work. The *Parmenides* was probably written, at least partially, before the *Theaetetus*, though Taylor argues: "In any case they must be nearly contemporary."¹⁹ Thus, the later dialogues from the *Theaetetus* on were written during the last twenty years of Plato's life—the period of Aristotle's stay in the Academy.

The three main characters of the dialogue—Socrates, Theaetetus, and Theodorus—afford matter for reflection. Theaetetus and Theodorus

¹⁷*Phaedrus* 262 a. Hackforth here comments: "What should be especially noticed in this argument is that knowledge of truth has come to be conceived as how things resemble and differ from one another; we are in fact coming to see that the way to truth is the method of dialectic, with its two parts, collection and division" (Plato's *Phaedrus*, p. 129).

¹⁸The "friends of the Forms" in the *Sophist*, as I have come to understand them, are the followers of Plato devoted to the early version of the theory of Forms in which there was no interrelatedness among the Forms and in which each remained a simple, immobile unity, "enjoying a splendid isolation not only from sensibles but from each other." Cf. Garry Wills, "'Being' in *The Sophist*," *THE MODERN SCHOOLMAN*, XXXVI

(Mar., 1959), 197-204; cf. also the reply by L. J. Eslick in the same issue, p. 206.

¹⁹Taylor, *Plato*, p. 321.

²⁰*Ibid.*, p. 322.

²¹In the *Republic* pure mathematics was true knowledge but inferior to the dialectic of essence in which mathematics was ultimately grounded. In the later dialogues Plato surrenders the claim to essential knowledge of the Forms; nevertheless, each Form remains a univocal unity in its essence. This is why the Forms become numbers in the later dialectic, and in accord with this move mathematics becomes dialectic. Cf. L. J. Eslick, "Plato on Being: A Reply to Mr. Wills," p. 207.

²²*Theaetetus* 148 d.

²³Cornford, *Plato's Theory of Knowledge*, pp. 27-28

were two of the greatest mathematicians of the Academy; both are also present in the *Sophist*, though the Eleatic stranger replaces Socrates in the later dialogue. The presence of the two mathematicians in these dialogues of crisis seems to be a clear indication of the role of mathematics in the reformulation of Plato's thought. Theodorus of Cyrene claims to be solely a mathematician unpracticed in the philosophy of the day and, like the aged Cephalus of the *Republic*, rapidly extricates himself from the main stream of the conversation. From Iamblichus we know that he was of the Pythagorean order; from Proclus that he ranked as one of the greatest of the fifth-century geometers. The younger Theaetetus was one of the first mathematicians of the fourth century and is credited with the beginning of a systematic study of the irrationals which were worked out to completion in Euclid's tenth book; he is also credited with the inscription of the octahedron and icosahedron within the sphere.²⁰ I believe that this presence of the two mathematicians is not without great significance and cannot be legitimately ignored in an objective interpretation of Plato's *Theaetetus* and *Sophist*. Even in the *Republic* fifteen years of mathematical training was considered an essential prerequisite for the study of dialectic; the emphasis upon mathematics is a constant factor throughout the middle and later dialogues, although, as we shall see later, the relation between philosophy and mathematics changes radically from the *Republic* to the later dialogues.²¹

The *Theaetetus* begins as another typical Socratic dialogue seeking after a definition of knowledge. Theaetetus can readily supply examples and objects of knowledge but cannot state what knowledge is in itself. Mathematics is taken as a model of knowledge; mathematical definition as the ideal for definition. Socrates bids Theaetetus:

Take as a model your answer about the roots: just as you found a single character to embrace all that multitude, so now try to find a single formula that applies to many kinds of knowledge.²²

Cornford notes the parallel with the first part of the *Meno*, where a definition of virtue is sought; there also a mathematical example is employed.²³ The mathematical or geometrical solution to the problem

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of irrationality in number is the Platonic ideal for the solution of the problem of the irrational element in being.

DIFFICULTIES IN PLATONIC DEFINITION

The real difficulty with Plato's demand for definition can be traced through the study of the early dialogues and in part is the source of the crisis of the later dialogues. The relation of the genus to its species presented itself already in the *Protagoras* as a problem that seemed to defy a rational solution.

Now I want you to tell me truly whether virtue is one whole, of which justice and temperance and holiness are parts; or whether all these are only names of one and the same thing. . . . There is no difficulty, Socrates, in answering that the qualities of which you are speaking are the parts of virtue which is one.²⁴

They are parts of one virtue and differ from one another as the parts of a face and not as homogeneous parts; for example, as parts of gold. Holiness and justice differ, but holiness is holy and justice is just. Then holiness is nonjust, and surely the nonjust is also the nonholy. Hence it seems that one must either identify justice and holiness with the genus virtue so that holiness is justice, or admit that justice is not holy. The Platonic genus remains a unit separate from its species; for, if it is not a unity in itself independent of its species, virtue itself would be a nothing.

The quest of the early dialogues is a quest for definition—for real and essential definition. Plato demands the impossible of his definitions; Socrates often asks for definitions of undefinables and for strictly univocal definitions. His procedure is to reduce an object to its supreme genus and then to demand a definition of that. His genera, too, are strictly univocal and in no way potentially contain the species; nevertheless, it is one of the basic assumptions of the early dialogues that knowledge supposes definition.

²⁴*Protagoras* 331 b.

²⁵Kaufmann, "Predication and Reality in Plato," pp. 34-35.

²⁶Richard Robinson remarks: "It seems . . . that his procedure implies . . . that there is a word or set of words which

gives or enshrines a knowledge of the thing X in some way in which the word X does not enshrine a knowledge of the thing X even for those who understand it and use it correctly" (*Plato's Earlier Dialectic* [Ithaca, 1941], p. 34).

Though Plato demands real and essential definitions as the basis for rational discourse, he imposes such conditions upon his definition that he all but renders it an impossibility. Father Kaufmann sums up the situation as follows:

There seems to be in Socratic-Platonic thought, right from the beginning, an absolute dichotomy between the one and the many. And along with this dichotomy there is always the drive toward a higher genus. Virtues must be reduced to virtue as such, virtue as such to knowledge as such. . . . But even more disconcerting is the absolute dichotomy or schism between essence and attributes. A thing's essential meaning must never be got through its attributes, properties or qualities, nor be articulated in terms of them.²⁵

Socrates is looking for a meaning of nature or essence in each of the cases as opposed to property; he is seeking a "magic charm" to express the essence of the thing to be defined.²⁶

Another problem regarding Platonic definition is its very mathematical character. Skepticism with regard to the study of nature had redirected Socrates to the study of man and ethical ideals; in the later dialogues Plato seeks refuge from skepticism in the rapidly growing science of the pre-Euclidean. We have seen the acceptance of the mathematical ideal or model for knowledge and definition in the *Theaetetus*; this heightens the problem of defining, since the geometrical figure, being univocal, can be clearly and distinctly conceived without its differences; for example, triangle without equilateral or right. This, however, is not equally the case with nonmathematical, nonunivocal genera.

A DEFINITION OF KNOWLEDGE

Theaetetus suggests that knowledge is perception, and Socrates interprets this in the light of Protagoras's dictum that "man is the measure of all things." This leads to a complete relativism that reduces knowledge to what appears to each individual. Socrates then combines this with a Heraclitean doctrine of the flux of the material world which contains within it contrary properties—heavy and light,

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large and small. The sensible world is not being, but rather a becoming—a motion or process.²⁷ No single sensible thing “is in and by itself”;²⁸ in other words, there is no such thing as a substance in the world of sense. A sensible is not *ousia* but a mere becoming, a process. The Heraclitean account of the sensible world is another of the constants of Plato’s thought that is found as early as the *Cratylus* and as late as the *Timaeus*.²⁹

Sensation arises in the percipient from the intercourse of the motion from the object and the motion from the sense. The conclusion drawn is that “nothing is one thing just by itself, but is always in process of becoming for someone.”³⁰ The sensible world is a flux of images upon the indeterminate or receptacle; no knowledge, consequently, can arise from a world of quality without substantial reality. There is no intelligibility in material things in any way whatsoever that could ever allow Plato to employ a theory of abstraction. In such a world everything is equally true and false; it follows that no percipient can have the same perception twice, that no two percipients can have the same sensation from the same object, and that neither percipient nor object exists save in relation to the other.³¹

This description of knowledge, however, places man on a level with that of the beast and makes every man equally wise. Plato then shows that there are some meanings of knowledge that are more than mere perception; for example, knowing Syriac is not merely perceiving Syriac characters, and knowing Socrates does not necessarily imply actually perceiving Socrates. At least memory is part of the given in knowledge. The recall of the doctrine of Melissus and Parmenides that being “is one, Immovable . . . the name of the All” points toward further difficulties with the present account of knowledge. The immobilism of Parmenides suggests that an acceptance of the Heraclitean theory as a whole is a truncation of the given knowledge.

Granted that perception is infallible, is perception knowledge? If all reality is in motion, there can be no knowledge, since not only are

²⁷Aristotle tells us that Plato never relinquished the Heraclitean doctrine on the flux of the material world which in his youth he acquired from his master, Cratylus (*Metaphys.* 987 a 32).

²⁸*Theaetetus* 153 e.

²⁹The doctrine of the “receptacle” in the *Timaeus* re-affirms the Heraclitean

position on the unintelligibility of the material world. There is no “this” in the world of change but only “such.” Cf. *Timaeus* 49 ff.

³⁰*Theaetetus* 157 b.

³¹Cornford, *Plato’s Theory of Knowledge*, p. 57.

the percipient and object in constant flux but also the very meaning of language, so that what is now knowledge cannot the next moment be called knowledge. To seek the truth in such a truncated view of reality is truly "to chase a flying bird." Plato shows that the viewpoint of extreme Heracliteanism cannot be completely accepted if any form of rational discourse is to be maintained; he does not question the Heraclitean account of the sensible world, but he shows that either one must surrender his claim to rational discourse, to truth, and to knowledge or one must restrict the Heraclitean theory to the sensible world alone.

Thus Plato argues negatively to the theory of the Forms which he needs to account for the given of knowledge—true and infallible. If Plato did not have a given "true and infallible" science—mathematics and especially geometry—one wonders whether he would have successfully maintained his claim to a suprapercceptual knowledge. Plato was, however, faced with the given of "Euclidean" geometry, which certainly is not derivable from the nonsubstantial world of qualitative flux. Hence, given the Heraclitean account of the sensible world and the "true and certain" knowledge of mathematics, there is need to postulate the intelligible world that the early dialogues has approached through the Socratic moral ideals. Existence, difference and sameness, unity and number, all require more than mere sense knowledge on the part of the knower and hence also, on the part of the object, the existence of suprasensible reality. The Forms are necessary to explain the given of knowledge if the world of scientific discourse is to be accounted for.

Perhaps knowledge is "making judgments," as Theaetetus next suggests. This is immediately seen to involve the problem of truth and falsity. Can one explain false judgment? What is it that makes judgment true? The problem is one that the *Sophist* will resolve; here Socrates prepares the ground for positive teaching by the negative task of showing that knowledge cannot be derived from opinion alone or from opinion with an account. The only anchor for opinion by which it can be made true and known as such is knowledge; consequently, one is led to the absurdity of defining knowledge as true opinion with knowledge. There is thus an absolute gulf between opinion and

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knowledge, and there is no way of securing opinion in knowledge save through knowledge itself. Thus one cannot rise by successive hypotheses to the unhypothetical Good of the *Republic*; knowledge and opinion are irreducibly different—different by a magnitude that no arithmetical proportion can express, as Plato puts it in the beginning of the *Politicus*.³²

The discussion of false judgment is interesting in view of the solution which Plato adopts in the *Sophist*. How can one predicate thus: *X* is *Y*? Or how can one predicate erroneously one thing of another? Antisthenes had reduced all predication to expressions of identity; Plato sees that any and every predication introduces duality into the subject. One cannot predicate anything of that which is absolutely simple; such was, unfortunately, the character of the Forms as proposed in the early dialogues. To pose the problem more clearly, let us take the propositions of the *Sophist* that motion is being and that rest is being. If being, motion, and rest are simples—atomic intelligible individuals—as the Forms of the early dialogues certainly were, what can this predication signify? Either motion and rest are identical with being and hence with each other—and all is a single whole as Parmenides held—or motion and rest and being are different, distinct, unrelated. In terms of the relation of justice and holiness with virtue, either justice and holiness are identical with virtue and with each other or justice and holiness and virtue are distinct, atomic, and unrelated. Either horn of the dilemma destroys the possibility of scientific discourse and predication.

Plato uses the image of the letters and the syllable in the last hypothesis of the *Theaetetus*—suggestive of this problem of knowledge and of the necessity of “weaving together” the Forms. If the elements (letters) are unknowable, then the complexus (the syllable) can never be known by a mere account or enumeration of the simple unknowables. In such a case knowledge of the whole would depend upon knowledge of each individual. Plato offers a suggestive solution:

³²*Politicus* 257 a-b.

³³*Theaetetus* 203 d.

³⁴The *Theaetetus* explicitly deals, not with the world of the Forms, but with the world of change from which knowledge cannot be derived; it is thus a

strong argument for the Forms. Here Plato suggests that a world of absolute simples is impossible and unknowable; the Forms, like the letters, are not knowable in themselves, but in relation.

³⁵Plato, pp. 374-75.

Perhaps we ought to have assumed that the syllable was not the letters but a single entity that arises out of them with unitary character of its own and different from the letters.³³

If the Platonic Forms are not isolated spiritual atoms but are related to one another, then scientific knowledge is a possibility. Thus Plato here raises the problem of the communication of the Forms which he will resolve in the *Sophist*;³⁴ the *Theaetetus* merely suggests the machinery for the solution. The image of the syllable and letters, however, appears frequently in the later dialogues, as does that of the irrational or incommensurable that can be known only in its commensurable powers. The problem of the contraries—motion and rest—united in their genus, being, cannot be answered in the Platonic setting of univocity unless we slay the reverend father Parmenides through the admission of the existence of nonbeing. Plato foreshadows throughout the *Theaetetus* and *Parmenides* the metaphysical solution to the problems of being and knowledge that is the triumph of the *Sophist*.

THE *PARMENIDES*

Before taking up the dialogue of solution with the method of division, let us briefly see the place of the *Parmenides* in the crisis of Plato's thought. Taylor tells us that the whole purpose of the emphasis on the philosophy of Elea is the suggestion that Plato is the true spiritual heir of Parmenides.³⁵ As the *Theaetetus* showed clearly the extent to which Plato would maintain the flux doctrine of his master, Cratylus, so the *Parmenides* shows the limitations of pure Eleaticism and also of the earlier theory of Forms, while once again emphasizing the need for the Forms if there is to be a world of scientific discourse.

The respect which Plato renders Parmenides is shown most clearly in the criticism of the Forms which Plato puts in the mouth of the great Eleatic. Plato realizes that the earlier theory of Forms presents a serious danger to the possibility of rational discourse no less than the complete flux of Heraclitus or the total immobilism of Parmenides. The criticism of the theory of Forms is intended to manifest the shortcomings of the theory as Plato had first presented it twenty years before in the *Republic* and *Phaedo*. There each Form was considered

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as an absolute simple; for example, virtue itself or the Good itself. From the early theory arises the difficulty which Wedberg calls the basic antinomy of the theory of Forms. Plato argues to the existence of the Forms from the "one-over-many" argument and then claims that the Form is an instance of itself. Justice is just if anything is, Plato often says; but does this not imply that there is another Form by which justice is just?³⁶

The meaning of participation becomes crucial; the participant cannot be said to be either a part or the whole of that in which it participates. *Chorismos* of some kind is imperative to preserve the unity of the Form; yet immanence of the higher in the lower or a relation of likeness—necessarily two-way—between the participated and participant is ruled out as possible meaning for participation. It is important to realize that the problem is equally grave whether one poses the question in terms of the participation of sensibles in the Forms or in terms of the participation of the Forms in one another. Divisibility of the Form in its essence is not possible: "Are you, then, prepared to assert that we shall find the single Form actually divided? Will it still be one? Certainly not."³⁷ It is particularly important to remember that the Form can never be divided in itself; if it were, it would no longer be one but many. If the Form of animal were itself divided into man and brute, then the Form of animal would no longer be one; it would not be anything, since it would not be separate. It is because of the fact that the genus—the higher Form—is not divided in itself that division requires the existence of nonbeing and that the final definition must include all the genera and species. Each genus remains a unity that is always indivisible in itself; the

³⁶"Plato assumes that, e.g. the Idea of Beauty is itself an ideal object which is beautiful (and supremely beautiful), the Ideal of Justice is itself something that is just (and supremely just), and so on. . . . To be beautiful is to participate in the Idea of beauty. . . . Hence, if the Idea of beauty is beautiful . . . then every Idea participates in itself. . . . This consideration, which I choose to call the fundamental antinomy of the Platonic theory of Ideas, is the greatest logical weakness of that theory" (Wedberg,

Plato's Philosophy of Mathematics, p. 36).

³⁷*Parmenides* 131 c.

³⁸*Plato and Parmenides* (London, 1939).

³⁹"If you start with the conception of a One which is one and nothing else, without any kind of diversity or plurality, then you cannot clothe this bare unity with any further attributes, since that would be to contradict the definition" (*ibid.*, p. 50).

species that participate in the genus fall outside the genus, for only through such a *chorismos* can the genus remain a univocal unity.

The second half of the *Parmenides* has become less an enigma through the deft exegesis of F. M. Cornford, who distinguished the two meanings of the One in the Hypotheses.³⁸ The first hypothesis presents the assertion of the One Simply and examines the implications that flow from such an assertion. The One Simply cannot be said even to be; all discourse is brought to a halt. Parmenidean monism is pushed to the extreme of its implications through the assertion of the One Simply; the more immediate problem, however, is that the Platonic Forms are absolute simples as they are presented in the early dialogues. The theory of Forms—each an absolute simple and posited to account for knowledge—now takes its vengeance upon its author by destroying the possibility of scientific predication. If the Form is a simple, then justice, for example, cannot be said to be just since scientific predication and definition imply composition. The logical result of the early theory of Forms and of extreme Eleaticism is the same—the death of all discourse.³⁹

The second hypothesis asserts the One Being—a whole of parts, of which each part is also a One Being and which is thus indefinitely divided. The logical implications of the One Being entail the destruction of all discourse, since everything is everything. No differentiation is possible where everything exists only in relation; no substantial reality can be grasped, since nothing is sufficiently differentiated from anything else. Measure must somehow be introduced if the flux of the One Being is to be brought to a standstill. In a sense, the One Simply reveals the impossibility of knowledge on the conditions set by Parmenides and the “friends of the Forms”; the One Being reveals the impossibility of knowledge on the conditions of Heraclitus. The first leads to an intellectual atomism at best; the second to a sensist relativism.

If the essence of being contained motion and rest, the essence of being would be other than itself; it would be a whole of parts—the One Being. The One Simply is indivisible, unrelatable, unknowable; the One Being is infinitely divisible, infinitely relatable, and unknow-

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able. Once again the problem must await the solution of the *Sophist*;⁴⁰ somehow a unit of measure must be introduced into the undifferentiated. If the Platonic genus is to remain a unity, a one, the species must fall outside the genus and be extrinsic to it. Thus, motion and rest are being; but the genus "being" is not in potency to its species. These lie outside the genus—in the otherness of the genus. This solution, however, will require the "death" of the great Eleatic, for non-being must be introduced into the real if one is to escape from the dilemma of the One Simply and the One Being.

Perhaps it should be mentioned here that Plato did not merely adopt the solution of the *Sophist* without seeing another possibility that lay in the direction of what we would call analogy. As Plato saw this possibility, it meant the admission that something was other in precisely that respect in which it was same. "Sameness itself and Difference are contrary to one another. So sameness will never be in what is different, nor difference in what is same."⁴¹ The Platonic genera are strictly univocal; only through some doctrine of potency and act could Plato have accepted a doctrine of analogy that implies that a being is other in precisely that respect in which it is same.⁴²

Plato's mathematical ideal prevents him from taking an analogical view of reality. Triangularity remains triangularity regardless of the kind of triangle involved; geometrical differences are in a way extrinsic to their genera. Animal, however, is different as animal in man and brute. Plato saw the possibility of an analogical solution to the

⁴⁰The solution to the question of the communication of the Forms must await the *Sophist* because Plato cannot put the necessary doctrine of nonbeing in the mouth of Parmenides without turning his philosophical parricide into a suicide. The machinery for the solution certainly is ready, but Parmenides cannot introduce nonbeing; consequently, the *Parmenides* cannot be thought of as "so normal and so representative of the great philosopher's metaphysical doctrine that—more than any other of the dialogues—it might well serve the student as a working outline of the whole" (Lynch, *Approach to the Metaphysics of Plato*, p. 18). The *Parmenides* and *Theaetetus* seem rather to represent a break with the early theory of Forms and yet await the fuller exposition of the later theory.

⁴¹*Parmenides* 146 d. Thus, I cannot agree that there is real analogy in Plato's thought; Plato sees the implications of an analogical solution to his difficulties and clings to univocity. Lynch claims, however, that "as early as this in the history of philosophy we are given a *theory of analogy*" (*Approach to the Metaphysics of Plato*, p. 75).

⁴²Nor should we blame Plato, for the elimination of any reality in the genus aside from its species is a considerable sacrifice—especially in exchange for the Aristotelian analogy of being that lacks the intrinsic principle of being by means of which an analogy of being is fully possible.

⁴³*Plato's Theory of Knowledge*, 187.

⁴⁴*Sophist* 236 e.

problem and clung to the mathematician's ideal of univocal knowledge of the real. Only through a doctrine of potency and act can sameness and difference be introduced without contradiction.

THE *SOPHIST*

Finally we are ready to see the method of division as it is presented in the *Sophist*. I have spent considerable time developing the crisis in Plato's theory of knowledge and reality in order that the method of division may be seen in its proper context. Plato is not merely dabbling with a clever logical device developed during his years of senility; if one refuses, however, to see the metaphysical implications of the method of division, the later dialectic can hardly be considered more than a logical pastime.

Throughout the dialogue, the mysterious stranger from Elea holds the dominant position, as he does in the *Politicus* also. Plato, the true heir of Parmenides, now finds it necessary to commit philosophical parricide, since the introduction of nonbeing is necessary if knowledge is to be saved. The Eleatic stranger represents Plato's new teaching which cannot suitably be put in the mouth of either Socrates or Parmenides.

The division of the angler serves as a model for method. Each of the divisions of the *Sophist* is pursued partly in earnest, partly in satire; but as Cornford suggests, the first six divisions serve as an induction of instances or as the collection whereby the final division can be made with accuracy.⁴³ The elusory character of the Sophist leads the stranger to the problem of truth and falsity—to the path of nonbeing for which the *Theaetetus* and *Parmenides* have prepared the way. The Sophist is a creator of images—of what appears and seems but is not.⁴⁴ If we are to account for the existence of falsity, nonbeing must in some way be; otherwise the arguments of the Sophists Euthydemus and Dionysodorus will triumph and exclude the possibility of false statements. For to speak the truth is to say what is; to speak what is false is to say what is not or to say no thing. Consequently, nonbeing must be in some way so that what is not can be said; the

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alternative is that only what is can be said, so that everything that is said is true.⁴⁵

The saying of the nonexistent involves the attribution of number to nonbeing, for we cannot avoid referring to it as either singular or plural. And "number must exist if anything does."⁴⁶ One cannot predicate what is real of what is not real; consequently, nonbeing, which must be either singular or plural, *is* in some way.⁴⁷

Plato suggests a definition of being as one common to the "friends of the Forms" and the improved materialists:

I suggest that anything has real being, that is so constituted as to possess any sort of power either to affect anything else or to be affected, in however small a degree, by the most insignificant agent, though it be only once.⁴⁸

The meaning of "power" in the definition has been the subject of much debate and research. Dr. Souilh   sums up the philosophical use of the word in Plato and claims that the "Platonic *dynamis* can be defined as the property or quality which reveals the nature of a thing."⁴⁹ Unfortunately this seems to be strikingly un-Platonic. Plato's problems with definition would have been a great deal more simple if property or quality could lead to a knowledge of the nature of a thing. Father Kaufmann concludes that knowledge of nature through property was impossible in Plato's thought.⁵⁰ The scholarly work of Souilh   cannot be ignored, but it does seem that he has

⁴⁵*Euthydemus* 284 c; *Sophist* 237 e.

⁴⁶*Sophist* 238 b.

⁴⁷The parallel here between Plato's argument and the form of argument used by B. Russell and G. E. Moore at one point in their development is striking. Cf. G. E. Moore, "The Conception of Reality," *Proceedings of the Aristotelian Society*, NS, XVIII.

⁴⁸*Sophist* 247 d-e.

⁴⁹Cornford, *Plato's Theory of Knowledge*, 236.

⁵⁰"In any event the dichotomy he set up between essence and all qualities and properties was such that these latter could have no positive function in setting up a definition. The relationship between property and essence worked only one way, and that destructively" ("Prediction and Reality in Plato," p. 44).

⁵¹A. Di  s, *Autour de Platon II*.

⁵²Liddell, Scott and Jones, *Greek-English Lexicon* (Oxford, 1938). Usually in its mathematical meaning, which Aristotle says is "by metaphor" (*Metaph.* 1019 b 33), *dynamis* means the second power, or square as in *Timaeus* 54 b; it is chiefly found in the dative in such expressions as *eutheia dynamei* *ise* a line the square on which is equal to the area (Archimides). In Euclid it is found in one of the definitions of the tenth book: *eutheiai dynamei summetroi* commensurable in square. In *Timaeus* 32 a, it is used of a square number; in *Theaetetus* 147 d, for the square root of a number that is not a perfect square.

⁵³Plato, p. 324.

limited himself to the study of the *sens philosophique de la δύναμις*.⁵¹ If by this expression he means that he has merely studied the philosophical use of the term—and it does seem that this is his meaning—then we can rightly ask how he has managed to distinguish the philosophical uses of the term from those that were not so used. His criterion for this distinction seems to have been his own conception of Plato's philosophy.

There is at least another use of *dynamis* in the dialogues and in Greek literature that is worthy of our attention.⁵² The term can stand for a mathematical power of a number, for the product of two numbers, and, less commonly, for an irrational root or surd. Plato employed the term in the last sense in the *Theaetetus*, where Taylor comments:

The use of the word *dynamis* in this sense of "quadratic surd" was presumably an experiment in language which did not perpetuate itself. The name for the "quadratic surds" which became technical in the Academy and has passed thence into Euclid and later mathematics generally is εὐθείαι δύνανται σύμμετροι, straight lines whose squares have a common measure.⁵³

Taylor, however, makes no attempt to connect this usage with the definition of being as power, though the mathematical emphasis of the later dialogues and the criticism of Aristotle tend to suggest this as a possibility. As the irrational in geometrical figures is not knowable or measurable save through its relations with its "powers" through which it may be approximated as closely as one pleases, so too the irrational in being is unknowable and unmeasurable in itself; but through its relations it can be differentiated and measured with increasingly more and more accurate approximations. For the one is the essence of being, and being is an image of the one. If we take Plato's earlier statement that "number exists if anything does" and correlate this with his ideal of knowledge as measure and the expressions of relations, then I think the definition of being as power takes on a fuller meaning. That is being which can image the one in some way and thus be capable of measurement and of being known, not in its essence but through its relations. This requires that beings

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be really related in such a manner that the particular Form is differentiated, not by what it is essentially but by its relations of sameness and difference. This implies the structuring of the Forms so that there is a foundation in reality for scientific predication; besides the essential unity of each Form, there must be a quasi-material principle—the foundation for these relations—otherness or nonbeing.⁵⁴

Here it is important to notice that because being is power, because the Forms are in dynamic relation to one another and related in a manner that is knowable and measurable, knowledge and the method of division are possible. One should not be surprised to see that the power of action and passion does mean causality of an efficient kind and that the meaning here is reduced to being in measurable relation. For the relative principle in Plato is nonbeing—the indeterminate dyad of the great and small.⁵⁵ Plato's theory of relations seems to fuse the relation with the *fundamentum*; moreover, he seems to reduce quantitative change to qualitative. Thus, nonbeing and the intrinsic principle of relatedness are one and the same.⁵⁶ Consequently, as the irrational surd is not commensurable or knowable in itself but only through its powers through which an approximation of its measurement—as close as one pleases—in a ratio of whole numbers is possible, so the irrational in being—the indefinite continuum between contraries somehow one in their genus—is measurable or knowable through its powers—its relations by which it can be differentiated as precisely as one wishes.

This definition of being as power, as that which through its relations is differentiated, and the existence of nonbeing are essential to the solution of the communication of Forms in one another. In some way motion *is*. We must hold this to avoid Eleaticism and to save knowledge. In some way rest also *is*. We must hold this to avoid Heraclitus and to save knowledge. The One Simply and the One Being equally destroy knowledge; in some way both motion and rest, though

⁵⁴*Metaphys.* 1089 b 16-24.

⁵⁵Even in Aristotle relation has the least being of all the predicaments, and relation is founded upon action, passion, or quantity (*ibid.*, 1088 a 29-35).

⁵⁶That Plato tended to fuse the foundation and the relation, or, what comes to the same thing, that he tended to make the relation intrinsic to the thing related and constitutive of the *relatum*, seems to

be clear in his discussions of difficulties arising from relational predication.

⁵⁷*Sophist* 252 e.

⁵⁸Demos, *Philosophy of Plato*, p. 130. Gilson seems to accept unquestioningly the conclusion of Demos (*Being and Some Philosophers* [Toronto, 1952], p. 12).

⁵⁹*Plato's Method of Dialectic*, pp. 86-95.

contraries, must be being. No participation leads to the impossibility of the One Simply; participation of everything in everything leads to the impossibility of the One Being. The only possible solution is that some things participate in some things, but not all in all.⁵⁷ Motion is not rest; sameness is not otherness. Motion is, however, being; and rest also is being. The genus of being, then, is divisible, not in itself—in its essence, which is a one—but in its otherness or nonbeing. The species are extrinsic to the genus, so that being is not divided in itself but in the otherness of being in which lie the contraries of motion and rest. Thus being is other than motion and rest, and rest is other than motion. Sameness and otherness are relative. Each Form is the same as itself or in relation to itself; each Form is other than all the others or in relation to all the others. An equation of being with sameness or selfhood is a misunderstanding of the relative character of the Same and the Other.⁵⁸

The implications of this structuring of the Forms are important for the method of collection and division. This structuring, first of all, means that no Form is divided in itself, in its essence. Such a division would be the destruction of the Form. The genus remains a unity; being, for example, is a unity which is divided into motion and rest, not through division of its essence but through division of its otherness or nonbeing. Being is the essence of motion and rest, but as the One is above being, so the essence of motion and rest is above or separate from motion and rest. Let us divide again. Motion might well be divided into local motion and qualitative motion. These are differences once again that lie outside the essence of motion, though motion is their essence. The Platonic genus is a separate univocal unity which is in no sense in potency to its species as is the Aristotelian genus; the Platonic genus is a unit that is more perfect and actual as it is more universal.

Secondly, there can be no “atomic form” of which Stenzel speaks.⁵⁹ Since each Form is indefinitely divisible through its otherness, there is nothing corresponding to the indivisible *infima species* of the Aristotelian logic. Plato does speak of arriving at an “uncuttable” Form, but this means rather a sufficiently close approximation than a truly atomic Form. Division in theory can be continued indefinitely, just

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as one can indefinitely continue to approximate the square root of the unit square.⁶⁰ Platonic dialectic, based on a mathematical ideal of knowledge, has much in common with modern mathematical physics, which is also based on measurement and relation rather than on essential knowledge.⁶¹

Thirdly, there is an intimate connection between the method of collection and division, the definition of being as power, and the existence of nonbeing or otherness. The new dialectic implies a radical change in the meaning of the real and in the metaphysics of the Forms. Plato does not suggest the definition of being as power without serious intent; it is only because beings can enter into relationship with one another that the existence of nonbeing is required if Plato is to avoid the intellectual atomism that he clearly sees is fatal to all rational discourse.

Finally, this interpretation accounts for the Aristotelian criticism of Plato's doctrine of Forms as Aristotle knew it during the twenty years of his stay in the Academy. Since there is no reason to suppose that Aristotle is perversely explaining the oral teaching of his master and since there is every reason to suppose that he was thoroughly familiar with it, an interpretation that can account for the oral teaching has much in its favor.⁶²

THE *POLITICUS* AND *PHILEBUS*

Before drawing the paper to a close, let us look briefly at the method of division in the *Politicus* and *Philebus*. The former continues the work of the *Sophist*. The *Sophist* solved the problems of the interrelation and communication of the Forms and of nonbeing, and finally reaches a definition of the Sophist and also of the true dialectician somewhat by chance. The *Politicus* now studies the statesman. The ideal of the philosopher-king is forgotten; the Sophist, statesman,

⁶⁰Taylor, *Plato*, p. 510.

⁶¹It is interesting that it was this mathematical form of Platonism that was so strongly influential with the founders of modern science, such as Galileo and Kepler. Skepticism of essential knowledge in both cases seems to have led to a mathematical ideal of knowledge that was based on measurement. Essential knowledge was in each case supplanted by quantitative measure—by relational knowledge.

⁶²Kaufmann, "Predication and Reality in Plato," p. 191.

⁶³*Politicus* 257 a-b.

⁶⁴*Ibid.*, 258 e.

⁶⁵*Ibid.*, 260 b; 262 b.

⁶⁶*Ibid.*, 262 a.

⁶⁷*Ibid.*

⁶⁸*Ibid.*, 262 3.

⁶⁹*Ibid.*, 263 b.

⁷⁰*Ibid.*, 265 b.

and philosopher are not of equal worth but differ from one another by more than is expressible in a mathematical proportion.⁶³ Here the theoretical and practical sciences are immediately distinguished, whereas in the *Republic* only the philosopher was fit to rule.⁶⁴

The division toward the definition of the statesman proceeds by "bisection"—dividing in half each new division; there is considerable emphasis on dividing in half at each step of the division.⁶⁵ The aim is to halve each genus—to find some way in which the genus is twofold and thereby to "cause that which is now sought among a double number of things to be sought among half as many."⁶⁶ There is danger in taking a single part and setting it off against many large parts without regard for the Forms. On the contrary, the part ought also to be a Form. It is fine to separate off the object of search immediately if this can be done correctly, but it is safer to proceed by bisection rather than by whittling off shavings. By cutting through the middle one is more likely to find classes or Forms.⁶⁷ Apparently one should strive to divide the genus at the quantitative midpoint rather than follow the logic of cranes. The division of man into Greeks and barbarians or of number into myriad and all the rest is poor methodology; one has no assurance that barbarian or nonmyriad numbers are one species of Form. Division of number into odd and even and of man into male and female is more equal and better.⁶⁸ If it is impossible to find a part that is also a class, then one might—as a last resort—divide into Lydians and Phrygians. Class and part are not other than each other. Every class of a genus is also a part, but not every part is also a class.⁶⁹ To divide living beings into human beings and beasts is to use the logic of cranes; for, as a crane might oppose cranes to all other animals and group the rest under one head and give them a single name, so we tend to make our division of animal into man and beast.

The division of the statesman is resumed. The stranger sees two paths by which he can proceed—a shorter and a longer. The shorter way separates off a relatively small part from the rest and is less in accord with what has been given as the ideal. Nonetheless, the division is near the end, and less danger is here involved in the shorter method.⁷⁰ The stranger first follows the longer way which divides

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more nearly in the middle. Here the division of tame, walking animals living in herds into horned and hornless is made; it is difficult to see that this is not the logic of cranes unless one admits that the division more closely approaches bisection of the genus than the division by means of the shorter way. The stranger asks Theaetetus—qua geometer—to make the final division by the diameter.⁷¹ The diagonal of the unit square was the mean and an irrational in which Theaetetus was particularly well versed. The diameter also perfectly halves the square, but the diameter cannot be expressed more than approximately by a ratio of whole numbers. If we overlook the obvious pun here involved in the text, there is also the possibility that the stranger wishes to suggest again the mathematical character of the method of division and the need to be content with an approximation, since the irrational in geometry and in being can never be more than approximated. The bisection of the genus is the best guarantee that one is dividing according to the Forms; apparently Plato realizes the difficulty of finding Forms at each stage of the division. Care in finding the quantitative mean is the best guarantee of success and is of extreme importance at the beginning of the definition, though toward the end a shorter way might be used with less danger of error. That one can proceed equally well by either of two paths indicates the nonessential character of Platonic definition; one defines by expressing relations, by otherness, not by essential difference. The relation between this dividing by the diameter and the definition of being as power in the *Sophist* is perhaps stretching a point, but perhaps not. The mathematical use of *dynamis* is common in Greek and not foreign to Plato's vocabulary. As the power or surd is known through its powers, which are measurable wholes or ratios of whole numbers, so the irrational in being is known or measured by relation to the other Forms. The final definition of the statesman is long-winded; as in all such definitions the whole series of genera and species must be expressed. The Platonic genus is *dynamis* or power,

⁷¹*Ibid.*, 266 a-b.

⁷²As I mentioned when the image occurred in the *Theaetetus*, Plato seems to have seen that a universe of unrelated simples is neither possible nor knowable. The image of the letters—the unknowable simples—combined into a unity that is

not a mere summation of the elements points toward the solution adopted in the *Sophist*; it is interesting to note that the word for syllable and for collection are the same in the Greek—*syllabe*.

⁷³*Philebus* 16 d-e.

⁷⁴*Ibid.*, 18 e.

but not *dynamis* in the Aristotelian sense; the Platonic genus is a unity apart from the species. Aristotle's potential genus is dependent upon his doctrine of analogy and of potency and act, but analogy can never fit into Plato's univocal mathematical ideal of knowledge.

The content of the *Politicus* and the *Philebus* is too vast for any thorough treatment in this already lengthy paper. The doctrine on the mean in both dialogues and in the *Epinomis* is important for this interpretation of the mathematical character of Plato's later theory of knowledge. The image of the letters and syllable which is found in the *Theaetetus*, *Sophist*, and *Philebus* receives its fullest treatment in the last-named of the dialogues and is of particular importance for our interpretation.⁷² A description of the method of division is particularly helpful in correlating the method of collection and division and the four kinds of the *Philebus*.

This being the way in which these things are arranged, we must always assume that there is in every case one idea of everything and must look for it—for we shall find that it is there—and if we get a grasp of this, we must look next for two, if there be two, and if not, for three or some other number; and again we must treat each of those units in the same way, until we can see not only that the original unit is one and many and infinite, but just how many it is. And we must not apply the idea of infinite to plurality until we have a view of its whole number between infinity and one; and then and not before, we may let each unit of everything pass unhindered into infinity.⁷³

This is explained by the image of the letters of the alphabet. Speech is one and yet infinite as well; one is wise who knows not merely that it is infinite or that it is one. It is rather knowledge of the intermediate that makes one a grammarian; one must know the way "each of them [is] one and many, and how it is that they are not immediately infinite, but each possesses a definite number, before the individual phenomena become infinite."⁷⁴ Another text from the *Philebus* is the closest that Plato comes to an explicit teaching of the indeterminate dyad of the great and small, to which Aristotle refers

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as the quasi-material principle of Platonic metaphysics.⁷⁵ It is through the introduction of measure that the indeterminate is differentiated and made knowable. Hotter and colder represent an infinite continuum that must be differentiated or brought to a standstill by the introduction of measure to be known. It is not an essential knowledge that is the hope of the later dialogues but a relational type of knowledge that demands the introduction of oneness into the indeterminate. Thus harmony and measure are created.⁷⁶

To this long treatment of the mathematical character of the later dialectic a final note on the place of mathematics in Plato's thought is not out of place. Even in the *Republic*, mathematics pertained to the realm of knowledge—*episteme*, though it held a subordinated position to the highest form of knowledge—*noesis*. In the later dialogues mathematics is no longer a hypothetical science grounded in intellectual intuition of the Good but assumes the role of the standard and form for all dialectic.⁷⁷ As an essential knowledge of the Forms proved itself an impossibility, each of the Forms became a unit in its essence differentiated and known only through its relative nonbeing or otherness. As the Forms became units known only through their relations with one another, they literally became numbers. As the Forms became numbers, the science of dialectic became the science of measure and number. Thus Plato moved from a ration-

⁷⁵"I am glad you responded. my dear Protarchus, and reminded me that the word 'emphatically' which you have just used, and the word 'gently' have the same force as 'more' and 'less.' For wherever they are present, they do not allow any definite quantity to exist; they always introduce in every instance a comparison—more emphatic than that which is quieter, or *vice-versa*—and thus they create the relation of more or less, thereby doing away with fixed quantity. For, as I said just now, if they did not abolish quantity, but allowed it and measure to make their appearance in the abode of the more and less, the emphatically and gently, those latter would be banished from their own proper place. When once they had accepted the definite quantity, they would no longer be hotter or colder; for hotter and colder are always progressing and never stationary;

but quantity is at rest and does not progress. By this reasoning hotter and its opposite are shown to be infinite" (*ibid.*, 24 c-d).

⁷⁶*Ibid.*, 25 e—26 a.

⁷⁷This is perhaps most clearly stated in the *Philebus* 57-58. "Certainly; and let us say in reply, that those arts into which arithmetic and mensuration enter, far surpass all others; and that of these the arts or sciences which are animated by the pure philosophic impulse are infinitely superior in accuracy and truth. . . . And yet, Protarchus, dialectic will refuse to acknowledge us, if we do not award to her first place. And pray, what is dialectic? Clearly the science which has to do with all that knowledge of which we are now speaking. . . ."

⁷⁸*Metaphys.* 987 b 19-24.

⁷⁹*Ibid.*, 987 b 26-7.

⁸⁰*Ibid.*, 987 b 30-33.

alistic dialectic of essence to an almost skeptical dialectic of relation in which being is power.

ARISTOTLE

I had hoped to go more thoroughly into Aristotle's criticism of the Platonic method of division, but space prevents me from more than touching upon what Aristotle has said. We have already touched upon several of the important texts regarding the later Platonic metaphysics and have seen that this is quite clearly the metaphysical structuring of the real implied by the method of division. The importance of the mathematical interpretation of Plato is clear in Aristotle, for

since the forms are the causes of everything else, he supposed that their elements are the elements of all things. Accordingly the material principle is the "Great and Small," and essence or formal principle is the One, since the numbers are derived from the "Great and Small" by participation in the One.⁷⁸

Plato is Pythagorean in making the One a substance and in making numbers the causes of being, but: "it is peculiar to him to posit a duality instead of a single Unlimited, and to make the Unlimited consist of the 'Great and Small'."⁷⁹ Plato made the numbers distinct from the sensible world which he continued to view as a nonsubstantial flux. "His distinction of the One and the numbers from ordinary things . . . and his introduction of the Forms were due to his investigation of logic . . ."⁸⁰ Apparently Plato moved from the given of knowledge of ethical ideals and of mathematics to the theory of Forms and numbers. Aristotle's statement on Plato's methodology confirms our analysis of Plato's movement from epistemology to a metaphysics of univocal and separate Forms and numbers. Aristotle confirms also the function of nonbeing in accounting for false judgment and for the irrational in being.

This thinker means by the not-being which together with Being makes existing things a plurality, falsity and everything of this nature; and for this reason also it was said that we must

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assume something which is false, just as geometricians assume that a line is a foot long when it is not.⁸¹

Nonbeing is the principle that makes existing things a plurality, since nonbeing is the principle of relation; for, though each Form in its essence is only what it is—a unit—through its relative nonbeing or otherness it can be differentiated from the others such that a plurality is possible. Nonbeing, moreover, can never be fully known, since all the relations of any Form can never be expressed, just as no geometrical figure can be perfectly measured. The Platonists posited nonbeing as the relative without investigating why there are many kinds of relations.⁸² The indeterminate dyad is composed of contraries which, according to Aristotle, cannot be first principles.⁸³ Aristotle also makes the revealing statement that Plato

was not far wrong in saying that the Sophist spends his time in the study of unreality. But that it is not even possible for there to be a science of the accidental will be apparent if we try to see what the accidental really is.⁸⁴

The accidental even for Aristotle is close to nonbeing.

The Aristotelian critique of division is found in the *Prior* and *Posterior Analytics* and in the first book *On the Parts of Animals*.⁸⁵ The first text follows a treatment of the syllogism and indicates Aristotle's determination to prevent any confusion of demonstration and division.⁸⁶ Division is assumed to be thought of as a kind of demonstration; Aristotle shows that it is at best a feeble syllogism. The second text is devoted to showing that "the same thing cannot be the object of both definition and demonstration."⁸⁷ He concludes that division provides neither definition nor demonstration, though it may produce knowledge in some other way as does induction. Division as a means of defining assumes the first genus and at each step of the division assumes the choice of one side of the dichotomy.

⁸¹*Ibid.*, 1089 a 20-24.

⁸²*Ibid.*, 1089 b 4-9.

⁸³*Ibid.*, 1087 b 5-10.

⁸⁴*Ibid.*, 1064 b 29-33.

⁸⁵*Prior Analytics* 46 a 31—46 b 37; *Posterior Analytics* 91 b 11—92 a 5; *On the Parts of Animals* 642 b 5—644 b 22.

⁸⁶*Prior Analytics* 46 a 31—46 b 37.

⁸⁷Harold Cherniss, *Aristotle's Criticism of Plato and the Academy* (Baltimore, 1944), p. 31.

⁸⁸*Posterior Analytics* 92 a 3-4.

⁸⁹*Metaphys.* 1037 b 8-14 and 24-27.

⁹⁰*Ibid.*, 1045 a 23-35.

⁹¹*On the Parts of Animals* 642 b 20-26.

Moreover, the essential nature of anything is a unity, and division does not yield a unity of definition.⁸⁸ In the Aristotelian metaphysics of matter and form the unity of the definition mirrors the unity of substance;⁸⁹ for every definition is drawn partly from the matter and partly from the form.⁹⁰ Plato cannot achieve a unity of definition, since for him animal and biped are unities in themselves and not related as potency and act. Consequently, the Aristotelian definition is complete with the proximate genus and a single difference, whereas the Platonic definition requires mention of all the genera and species from the highest genus to the last division. Furthermore, division often leads to a dichotomy into a form and its privation, as horned and hornless; since there are no forms of privations, the privative is not further divisible.⁹¹

Aristotle found substantial being in the sensible world and employed the doctrine of act and potency in his analysis of being. He emphasizes the unity of substance and the corresponding unity of the definition. This all depends upon some application of analogy and denies the existence of a generic unity distinct from the species, which Plato held as a fundamental argument for his position. Plato began with the nonsubstantial flux of the material world and the given of universal and scientific knowledge, which led to the postulation of existing Forms and numbers. A lack, or rather the rejection, of analogy and the necessity of a related world of intelligibles led him to a radical revision of his earlier dialectic of essence, which resulted in the new dialectic of collection and division—a dialectic of otherness and nonbeing and in a nonessential and relational type of knowledge. This new dialectic, however, necessitated radical changes in metaphysics—the introduction of nonbeing, otherness, the unlimited, or the indeterminate dyad of the great and small. Plato has constructed a dialectic and a metaphysics of univocal genera and species, each a one—a unity in itself but related to all reality through its otherness or relative nonbeing. The essence of each of the Forms is a one, but the essence is separate from that of which it is the essence. Plato opted for a univocal mathematical ideal of knowledge and has pursued this ideal to its conclusions that necessitate a metaphysics where the One is above being, where essence is separate, and where nonbeing is and must be—where being is power.

THE STRUCTURE OF WOLFFIAN PHILOSOPHY

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Christian Wolff (1679-1754) was the dominant figure in German philosophy in the first half of the eighteenth century. Taking his cue from the seventeenth-century rationalists, especially Leibniz, Wolff undertook the task of reorganizing and revitalizing the traditional philosophy of the Schools. The philosophical system that resulted from these efforts prepared the intellectual atmosphere of Kant's pre-critical period and also has contributed heavily to the development of contemporary Scholasticism. One of the key elements in this Wolffian legacy is his understanding of what philosophy is. Wolff realized that his position on this question would largely determine the direction and goals of his philosophical speculations. Therefore he prefaced his nine-volume exposition of systematic philosophy with a lengthy discussion of the structure of philosophy. In this paper we will attempt to present an exposition and evaluation of this discussion as it is found in his *Preliminary Discourse* and in the opening sections of the *Ontology*. Following Wolff's own divisions, this paper will treat three topics: the definition of philosophy, the parts of philosophy, and the method of philosophy.

I. THE DEFINITION OF PHILOSOPHY

Wolff's discussion of the nature of philosophy is integrated with his view that natural human knowledge is subjected to a threefold division into history, philosophy, and mathematics. By means of our senses we know things that exist and occur in the material world. Further-

more, the human mind is conscious of the mutations that occur within itself. The knowledge of things that exist and occur in the material world and of the changes that occur in the mind is called history.¹ To put it another way, history is knowledge of the fact, whether that fact be discovered in the mind or in the material world. Moreover, anything that exists or occurs must have a reason why it exists or occurs. To attempt to uncover this reason is to go beyond history into philosophy. Hence Wolff defines philosophy as the knowledge of the reason of those things that exist or occur.² History is knowledge of the fact; philosophy is knowledge of the reason of the fact. Finally, whatever is finite has a determinate quantity, which can be seen from the fact that insofar as a thing is finite it can be increased or decreased.³ Knowledge of the quantity of things is called mathematics. Thus for Wolff human knowledge is either historical, if it deals with the bare fact; or philosophical, if it deals with the reason of the fact; or mathematical, if it deals with the quantity of things.

In the above definition of philosophy, the main problem, of course, is to determine exactly what Wolff means by "the reason of the fact." He himself gives us a detailed answer to this problem in terms of his doctrine on the principle of sufficient reason and its distinction from the principle of contradiction.

The first principle in philosophy is the principle of contradiction. This principle is grounded on direct and indubitable experience. For we find that the nature of the mind is such that when it judges that something is, it cannot simultaneously judge that the same thing is not.⁴ To maintain the opposite would be to destroy all meaning in the judgment. Irrespective of whether or not any particular judgment is true, it cannot include its opposite, for then the judgment would be a nonsense statement. It is also clear why this principle must be

¹Christian Wolff, *Discursus Praeliminaris de Philosophia in Genere*, No. 3 (editio novissima; Veronae, apud Haeredes Marci Moroni, 1779). In this paper all references to Wolff will be taken from this Verona edition of 1779.

²*Ibid.*, No. 6.

³*Ibid.*, No. 13.

⁴*Philosophia Prima sive Ontologia*, No. 27.

⁵*Ibid.*, No. 286.

⁶"Quoniam esse vel non esse conside-

rari debet instar alicuius praedicati B, quod ipsi A tribuitur, ut adeo propositio singularis, A vel est vel non est, sub hac formula generali omnium singularium, A est B, contineatur, quod A sit B, hoc est, quod A vel sit vel non sit, admittimus tanquam verum vi principii contradictionis, atque adeo propositio, quodlibet est vel non est, tanquam corollarium sub principio contradictionis continetur" (*ibid.*, No. 54).

first in the development of philosophy. Since it governs the meaning content of every statement, the principle of contradiction is presupposed in all discussion.

The principle of contradiction applies to concepts as well as to judgments. If the notes constituting a concept are mutually consistent, then the concept is a genuine concept which represents a possible. On the other hand, if two conceptual notes are mutually repugnant, then they cannot be united into a genuine concept, for such a combination would issue in an impossibility. Hence the principle of contradiction is the criterion for distinguishing the possible from the impossible. As such, it could also be called the law of internal consistency which governs the world of the possibles. This law applies not only to the human mind but also to the divine mind. The ideas produced by divine reason must have meaning, and as such they must be internally consistent. Hence the myriad of possibles in the divine mind is not due to the caprice of divine will, as Descartes would have it. Rather, they are governed by the law of divine reason, which is the principle of contradiction. And from this principle the possibles derive necessity. For if the possibles are so determined by divine reason, then what is possible is necessarily possible.⁵ As we shall see, this doctrine of the necessity of the possibles plays a major role in Wolff's theory of science.

The principle of the excluded middle is contained under the principle of contradiction as a corollary. For in an existential judgment the "to be" ought to be considered as a predicate of the subject.⁶ And if we judge that *A* is, then by the force of the principle of contradiction we cannot simultaneously judge that *A* is not. In other words "to be" and "not to be" are mutually contradictory predicates that cannot be simultaneously attributed to the same subject. Hence anything either is or is not. This is the principle of the excluded middle.

The stage is now set for the introduction of the notion of sufficient reason. Everything either is or is not; that is, any one thing belongs either to the world of possibles or to the world of actuals. If the former, it is an internally consistent object governed by, and intelligible through, the principle of contradiction. But why is it that some possibles are actual? The principle of contradiction alone is not

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adequate to explain this. The mere internal consistency of a possible does not confer actuality upon it. Otherwise all possibles would be actual. Something further is needed. The adequate understanding of the actual goes beyond the principle of contradiction to include some sort of explanation why that possible rather than some other possible is actual. This further explanation is the sufficient reason. Wolff's definition of the principle of sufficient reason is significant. "There is nothing without a sufficient reason why it is rather than is not."⁷ The principle of sufficient reason states that there must be an intelligible explanation of the actuality of the actual, as distinct from the principle of contradiction, which states that there must be internal consistency in the possibility of the possible.

Now just what is it that constitutes the sufficient reason in any given case? In order to answer this question we must turn to Wolff's outline of the basic elements in being. Whatever is in a being is either an *essentiale*, an attribute, or a mode. The *essentialia* are the elements that constitute the essence. These *essentialia* must satisfy two requirements.⁸ First, they cannot be mutually repugnant; that is, they must satisfy the principle of contradiction so that the essence formed by them is a possible essence rather than an impossibility. Secondly, the *essentialia* are not determined by each other or by anything prior. As such they are the first elements in being and require no explanation in terms of anything prior. In short, these are the pure possibles or essences that are governed only by the principle of contradiction.

The attributes are also defined in terms of two requirements.⁹ First, the attributes must be mutually consistent with each other and with the *essentialia*; or, in other words, the attributes must not violate the principle of contradiction. Secondly, the attributes are determined by the *essentialia* and must be constantly united with them. Because of this second point, the attributes must find their adequate explanation in the *essentialia*. Hence the attributes are related to the *essentialia* as to their sufficient reason, and an understanding of them in terms of the principle of contradiction alone is not adequate. This, then, is the

⁷"Propositio, quod nil sit sine ratione sufficiente, cur potius sit, quam non sit, dicitur principium rationis sufficientis" (*ibid.*, No. 71).

⁸"Quae in ente sibi mutuo non repugnant, nec tamen per se invicem deter-

minantur, essentialia appellantur, atque essentiam entis constituunt" (*ibid.*, No. 143).

⁹*Ibid.*, Nos. 145-46.

¹⁰*Ibid.*, No. 147.

¹¹*Ibid.*, No. 160.

first instance of the use of the principle of sufficient reason. Attributes are present in a being because they are determined to be present by the previously given structure of the essence.

The modes, like the attributes and the *essentialia*, must conform to the principle of contradiction. Hence the modes of a being must be mutually consistent with themselves and with the prior structure of the attributes and the *essentialia*. Unlike the attributes, however, the modes are not determined by the *essentialia*; and thus they need not be constantly, but only contingently, present in a being.¹⁰ Now, the modes are obviously not primary but derived elements in a being. Hence the question arises as to what is the sufficient reason for the modes. In answer to this question a distinction must be made.¹¹ The sufficient reason why a mode can be present in a being is contained in the *essentialia*. But the sufficient reason why a mode actually is present is contained either in the preceding modes or in some being other than the one in which it is present. This ultimately reduces, of course, to locating the sufficient reason for the actual presence of modes in some being external to the being in which the modes are actually present. Thus there are both internal and external sufficient reasons.

Now, we have already pointed out that for Wolff whatever is present in a being is either an *essentiale*, an attribute, or a mode. This division is exhaustive. We have also seen that the *essentialia* require no sufficient reason since they are primary underived elements of pure essence. Only the attributes and modes require a sufficient reason. Hence a sufficient reason can only be one of two things. It is either the *essentialia*, which are the sufficient reason why attributes are present and why modes can be present; or else it is an external being, which is the sufficient reason for the actual presence of modes. Wolff's definition of philosophy should now carry a more exact meaning for us. Philosophy as knowledge of the reason of the fact, is a knowledge of the sufficient reason that determines that one possible is actual rather than another. This sufficient reason is either the internal constitution of the essence or an external being.

In reviewing the above distinction between *essentialia*, attributes, and modes, an interesting question comes to mind. Where does

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existence belong? Since Wolff repeatedly asserts that this threefold division of being is exhaustive, we cannot say that existence is a fourth and unique type of determination in being. What, then, is existence for Wolff? In God, existence is an attribute and hence is necessarily determined by, and is constantly present to, the divine essence. Since an attribute is related to an essence as to its sufficient reason, God's essence is the sufficient reason for His existence; and thus the essence of God must overflow into actual existence. Like all the rationalists of the seventeenth and early eighteenth centuries, Wolff looks with approval on the ontological approach to the proof of the existence of God. God enjoys the unique privilege of existing merely because He is possible.

In the creature, however, existence cannot be an attribute. For creatures are subject to change and can come into existence and go out of existence. In such beings existence must be a mode. So understood, existence is merely an accidental adjunct to the real being or essence of the creature. To put it another way, existence in the creature must be distinct from its possibility, since mere possibility is not sufficient for its existence. And since philosophy is the science of the possible, existence must be excluded from philosophy. Because of this, all of the parts of philosophy must be defined by Wolff as knowledge of essences or possibles. Existential knowledge is historical knowledge of the fact. Philosophical knowledge of the reason of the fact is nonexistential. Even causality is understood as an intelligible reason or explanation rather than an existential event.¹²

With the above distinctions in mind, we can now proceed to Wolff's second and more explicit definition of philosophy. "Philosophy is the science of the possibles insofar as they can be."¹³ Each term in this definition is pregnant with meaning.

First of all, philosophy is a science. By this Wolff means that philosophy is a habit of demonstration or inference that must begin from certain and immutable principles and proceed to its conclusions through legitimate sequence.¹⁴ As we shall see in detail later on, the method of philosophy as a science must be rigorously deductive in the

¹²*Ibid.*, No. 883.

¹³*Discursus Praeliminaris de Philosophia in Genere*, No. 29.

¹⁴*Ibid.*, No. 30.

¹⁵*Philosophia Prima sive Ontologica*, No. 94.

¹⁶*Ibid.*, No. 97.

mathematic sense. Wolff intends to include this methodological requirement in his definition of philosophy.

Secondly, philosophy is defined as a knowledge of the possible rather than the actual. The reason for this should now be clear. The existence of a created being is a mode, and hence, as divorced from its possibility, does not contain the necessity which is required for the scientific proposition. The possibles, however, are necessarily possible as dictated by divine reason. Hence philosophy derives its necessity from the necessity of the possibles. Wolff explicitly says that all direct demonstrations depend on the principle that the possible can be concluded from the possible.¹⁵ And all indirect demonstrations depend on the principle that that is impossible from which an impossibility follows.¹⁶ All demonstrations are reduced to the notions of possibility and impossibility. What has happened to existential demonstration?

Finally, it is most significant that philosophy is defined as a knowledge of the possibles *insofar as they can be*. Several distinctions are implied here. Note that Wolff does not say "insofar as they are possible." The possibility of the possible is governed by the principle of contradiction alone and not by the principle of sufficient reason. Philosophy is not simply an exercise in testing the internal consistency of concepts. Although this must be presupposed, philosophy as a knowledge of the reason of things is properly guided by the principle of sufficient reason rather than only by the principle of contradiction. Also note that he does not say "insofar as they are" but rather "insofar as they can be." For the reasons given above, actual existence is not susceptible to scientific treatment. Rather, philosophy must limit itself to a knowledge of the possibles in terms of their conditions or possibilities for existence. Philosophy is the science of the possible as existable. In other words, by the reason of the fact Wolff means a purely conceptualistic explanation in terms of essences and possibilities.

We began this section by outlining Wolff's distinction between history, philosophy, and mathematics. The position of philosophy as intermediate between history and mathematics can now be understood. Philosophy is dependent upon both history and mathematics, but in

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different ways. History provides the starting points of philosophical knowledge, for experience reveals to us those things from which the reason of other things can be given. A careful examination of historical knowledge provides the certain and immutable principles of philosophy.¹⁷ History must precede, and ought to be constantly conjoined with, philosophy. On the other hand, philosophy acquires completeness of certitude by using the same methods of rigorous deductive argumentation that have proven so fruitful in mathematics. As Wolff says, "Mathematics completes the evidence" (*evidentiam autem complet mathematica*).¹⁸ He does not mean here that mathematics supplies the principles of philosophy. Rather, deductive mathematical method is the tool the philosopher must use in order to organize and understand his experience philosophically.

II. THE PARTS OF PHILOSOPHY

The term "philosophy," which Wolff has just defined for us, is a very general expression that includes a large number of quite distinct philosophical disciplines. These various parts of philosophy are distinguished from one another on the basis of the subject-matter under consideration. One philosophical science differs from another only in terms of what is known and not in terms of how it is known. In other words, this is strictly a material-object division of philosophy. It is interesting to note that there is no mention made of the traditional material-object-formal-object method of defining the parts of philosophy. In a sense one could say, however, that all of the parts of philosophy have for Wolff the same formal object; namely, knowledge of the possibles insofar as they can be. As we shall see, Wolff includes this latter element in defining the parts of philosophy.

Wolff points out that this method of distinguishing the various parts of philosophy has two significant consequences. First, there is no theoretical limit to the number of the parts of philosophy. New parts and new subdivisions of former parts can always be introduced as new areas of subject-matter come to light.¹⁹ Indeed, Wolff himself has suggested several additions to earlier delineations of the parts of philosophy. Secondly, if the parts of philosophy differ from one another

¹⁷*Discursus Praeliminaris de Philosophia in Genere*, No. 34.

¹⁸*Ibid.*, No. 35.

¹⁹*Ibid.*, No. 86.

²⁰*Ibid.*, No. 87.

²¹*Ibid.*, No. 56.

only in terms of their subject-matter, then it follows that the same method can be used in all the branches of philosophy. As we shall see, this is the deductive method perfected by the mathematicians. Furthermore, the various parts of philosophy ought to be organized into a consecutive series in which the earlier parts supply the principles for the beginning of the later parts.²⁰

Granting this subject-matter method of distinguishing the parts of philosophy, the next problem is to designate the various objects of human knowledge. Wolff suggests a threefold division. The objects of our knowledge are God, human souls, and material bodies. This division is exhaustive, and hence there can be no parts of philosophy outside of these three general areas.²¹ Wolff points out that he does not deny the existence of finite immaterial beings or angels. But since we know of such beings only through Scripture, they cannot be the subject of our natural philosophical knowledge.

Corresponding to the above distinctions are the first three parts of philosophy; namely, natural theology, psychology, and physics. Natural theology is defined as the science of those things that are possible through God. Psychology is the science of those things that are possible through the human soul. Physics is the science of those things that are possible through material bodies. It is interesting to note here how Wolff observes the requirements of his general definition of philosophy in defining these first three parts of philosophy. They are all described as sciences of the possible.

Besides these three sciences, there are two further parts of theoretical philosophy. Ontology, or first philosophy, studies being in general and the general affections of beings. Such a science is possible because there are some things that are common to all beings. Secondly, the world in which we live is not the only possible world that might have been created. Hence it is possible for us to contemplate those things that are common to the existing world and to any other possible world. The part of philosophy that investigates the world in general is called general or transcendental cosmology.

Thus there are five parts of theoretical philosophy for Wolff; namely, natural theology, psychology, physics, ontology, and general cosmology. Wolff continues his discussion by suggesting further

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combinations and subdivisions. Psychology and natural theology have a common element, in that they both study spiritual being. Therefore these two parts of theoretical philosophy can be called *pneumatica*, which means "the science of spirits." The term "metaphysics," on the other hand, is a common name used to refer to the combination of ontology, general cosmology, and *pneumatica*. Hence Wolff defines metaphysics as the science of being, of the world in general, and of spirits. *Pneumatica* and metaphysics are presented by Wolff as sciences that are compounded of other less extensive sciences. Such a procedure seems quite unusual unless one recalls that Wolff distinguishes the parts of philosophy strictly in terms of the subject-matter under investigation. According to this method, there could well be parts of philosophy which are subdivisions of other more general parts.

It is interesting to note in passing that the expressions "general metaphysics" and "special metaphysics," which are usually attributed to Wolff, do not appear in his formal discussion of the division of the sciences. It is easy enough to see, however, how this distinction could be read into Wolff's position. Ontology, as a part of metaphysics, studies the general properties of being and hence could be considered general metaphysics. On the other hand, natural theology, psychology, and general cosmology, as parts of metaphysics, study the properties of special types of beings and hence could be called special metaphysics.

The remaining part of theoretical philosophy—namely, physics—is subdivided by Wolff into a considerable number of more specialized sciences. These parts of physics and their proper subject-matters are as follows: general physics (general affections of bodies), cosmology (structure of the given world), *meteorologia* (meteors), *oryctologia* (minerals), *hydrologia* (water), *phytologia* (plants), and *physiologia* (animated bodies). The division here is obviously made in terms of the subject-matter studied; and further divisions and subdivisions are quite possible as more and more is discovered about the various types of bodies in the world. It should also be noted that cosmology as a part of physics is not the same as general or transcendental cosmology. The former studies how the given world is composed from the various types of bodies existing in it. The latter studies the requirements and

properties of world in general, whether it be this world or any other possible world.

Two further subdivisions should also be mentioned here. The derivation of the principles of both physics and psychology from experience is often very difficult and therefore requires special attention. Hence each of these sciences ought to have appended to it a special experimental discipline whose purpose is to establish its principles. Thus the following distinctions arise. Experimental physics is the science of establishing by experimentation the principles from which the reason can be given of those things that occur in nature. Dogmatic physics, as defined above, is the science of those things that are possible through material bodies. On the other hand, empirical psychology is the science of establishing through experience the principles from which the reason can be given of those things that occur in the human soul. Rational psychology is the science of those things that are possible through the human soul. In both of these cases the experimental discipline ought to be developed first because it supplies the principles for its counterpart.

Over and above the parts of theoretical philosophy that we have just outlined, there is another group of philosophical sciences that deal with human actions. Using again the subject-matter method of division, Wolff divides this area of philosophy into the sciences that deal with the cognitive, the appetitive, and the productive actions of man.

In the first group are contained logic and *ars inveniendi*. Logic is defined as the science of directing the cognitive faculty to the knowledge of truth. *Ars inveniendi* is the science of investigating latent truth.

The sciences dealing with man's appetitive actions constitute what Wolff calls practical philosophy, which is defined as the science of directing the appetitive faculty to the choosing of good and the avoiding of evil. The five parts of practical philosophy are as follows: *jus naturae* (knowledge of good and evil actions), universal practical philosophy (general theorems and maxims), ethics (individual morality), politics (civil society), and *oeconomica* (lesser societies).

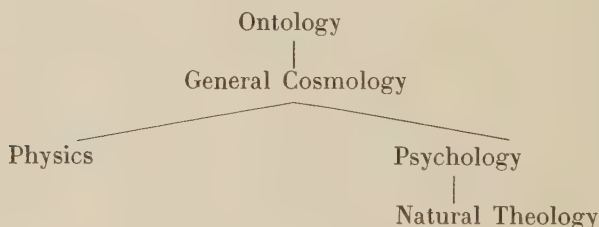
The science of man's productive actions is called technology. Sub-

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divisions here are grammatical philosophy, rhetorical philosophy, poetical philosophy, and so on.

Finally, natural things can be understood in terms of their final cause as well as their efficient cause. That part of natural philosophy which explains things in terms of their end is called teleology.

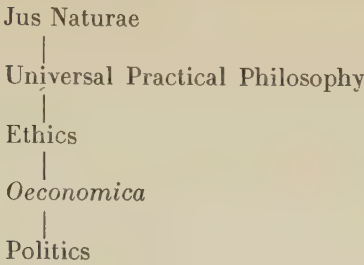
As was mentioned above, one of the consequences of Wolff's distinction of the parts of philosophy in terms of their subject-matter is that the parts of philosophy ought to be organized in a consecutive series. The order in this series is dictated by the principle that those parts must come first which provide the principles for the other parts. Hence, Wolff presents us with a deductive hierarchy of the philosophical sciences. For purposes of study, logic must come first. For the proofs in all the branches of philosophy depend on an understanding of logical procedures. In the order of demonstration, however, ontology and psychology must precede logic, since they provide the theoretical justification for the laws of logic. Wolff admits that there is a certain circularity here. But for practical purposes he gives precedence to logic. In the theoretical parts of philosophy, ontology comes first, followed by general cosmology, then by either physics or psychology. Natural theology must come after psychology. Diagrammatically this can be represented as follows:



²²*Ibid.*, No. 115.

²³*Ibid.*, Nos. 132-33.

Practical philosophy must come after metaphysics (ontology, psychology, and natural theology.) Within practical philosophy the order of the part is:



Once gain, the guiding principle for determining this hierarchy of the sciences is that each subordinate science derives its principles from the higher sciences.

III. THE METHOD OF PHILOSOPHY

The order that one ought to use in treating the content of philosophy is what Wolff means by philosophical method.²² This order is described by Wolff as being completely deductive, satisfying all of the usual requirements for syllogistic certitude. This can be clearly seen from even a cursory reading of many of Wolff's writings, which bear a close resemblance in method to Euclid's *Elements* and Spinoza's *Ethics*. Propositions in the body of Wolff's treatises are proved by frequent references back to previously proved propositions that serve as premises. Ultimately this process must begin, if certitude is to be present, with absolutely first self-evident propositions and definitions. Wolff's discussion of philosophical method is guided completely by the demands imposed by his avowal of deductive order in philosophy.

The first and most important of these demands is that in every part of philosophy that order must be maintained in which those things come first through which other things are understood and demonstrated. This principle is referred to by Wolff as the supreme law of philosophical method.²³ The various other methodological rules which he gives are merely elucidations of this fundamental principle. Anything that disagrees with this principle must be banished from philosophy as leading to confusion and possible error. Several more

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specialized rules of method are given in order to safeguard this supreme law of method.²⁴ First, no terms can be introduced into philosophical discussion unless they are accurately defined. Before one can settle the question of the truth of a proposition, there must be agreement as to the meaning of the terms. Without this there can be no agreement as to what constitutes an adequate proof. Secondly, no proposition can be admitted unless it is sufficiently demonstrated. Otherwise the truth value of subsequent conclusions is in jeopardy, which is contrary to the requirements of scientific certitude. Thirdly, the predicates of all propositions must be accurately determined. By this Wolff means that not only must the meaning of the predicate term be clearly stated but that also its relation to the subject must be made explicit. If a predicate belongs to a subject only under certain conditions, then these conditions must be spelled out lest we attribute that predicate to its subject under all conditions and thus fall into error.

A second demand imposed by the deductive method is the distinction between demonstrable and indemonstrable propositions. If genuine certitude is to be present in a deductive series, there cannot be an endless ascent in prior premises. Or, as Aristotle had said centuries earlier, there must be some propositions which are always premises and never conclusions in a deduction. Hence Wolff distinguishes between indemonstrable propositions, in which it is apparent from a knowledge of the terms that the predicate agrees or disagrees with the subject, and demonstrable propositions, in which such a relationship is not yet seen.²⁵ Two things are worthy of note here. In the indemonstrable proposition the relation between the subject and the predicate is seen by an analysis of the terms rather than by an inductive appeal to experience. This is a typical rationalist procedure, which involves the danger of cutting the starting-points of philosophy off from the world of real experience. Or, to put it another way, such a proposition must have logical necessity. But does it also possess metaphysical necessity? Secondly, Wolff seems to be saying here that the relation of the predicate to the subject in the demonstrable proposition is also analytic. In fact, the reason why a demonstrable proposition is demonstrable is that there are one or more intermediaries

²⁴*Ibid.*, No. 139.

²⁵*Philosophia Rationalis sive Logica*, No. 262.

²⁶*Discursus Praeliminaris de Philosophia in Genere*, No. 126.

²⁷*Ibid.*, No. 128.

²⁸*Ibid.*, No. 139.

between its subject and predicate that must be made explicit by deduction before the truth of the proposition can be seen. Hence deduction is really a series of analytic intuitions in which each term is evolved out of the content of its immediate predecessor. This interpretation is supported by Wolff's constant procedure of developing his philosophy by drawing out new predicates by analyzing the meaning-content of a previous subject term. In short, Wolffian philosophy progresses by an analysis of concepts rather than by an induction from experience.

One would think that in advocating the rigors of the deductive method Wolff would find no place in philosophy for reasoning at the level of probabilities. Such, however, is not the case. An important role in Wolffian method is exercised by the philosophical hypothesis. This latter is defined as a proposition which is assumed because through it a reason for a certain phenomenon can be given, although it has not been shown that this is the true reason.²⁶ Such hypotheses are useful tools in philosophy insofar as they prepare the mind for the discovery of the true reason. If deductions from a hypothesis are contrary to experience or to previously proven propositions, then the hypothesis must be rejected. On the other hand, if such deductions are consistent with experience and previously proved propositions, then the probability of the hypothesis is increased. This process alone, however, never can establish the hypothesis as an absolute certitude. Hence Wolff warns us that a hypothesis cannot function as a genuine deductive principle in the proof of propositions that are to be admitted into philosophy as dogma.

In conclusion, one cannot fail to point out the similarity between the structure of Wolffian philosophy and the structure of mathematics. Wolff was a professor of mathematics and this background did not desert him when he directed his energies to the field of philosophy. Indeed, in one very significant text he explicitly states that philosophical method and mathematical method are identical.²⁸ However, this identity does not come about by the philosopher simply transplanting the method of the mathematician into his own field. Rather, the philosopher and the mathematician both use the same method because this method is dictated by the requirements for certitude. Or, as Wolff prefers to say, the rules of method are deduced from the

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notion of certitude. This casts a new light on the whole problem. Not only do philosophy and mathematics use the same method, but this is the only possible method for establishing certitude in any of the areas of demonstrative knowledge. This one universal method is called, of course, the scientific method. The persistent desire of the seventeenth-century rationalists to have one ubiquitous method for the discovery of all certitude continues unabated in the mind of Christian Wolff.

CHARGES OF PHILOSOPHICAL PLAGIARISM IN GREEK ANTIQUITY

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In Greek antiquity, plagiarism—that is, the stealing, borrowing, purloining, copying, using, or passing off as one's own the ideas, doctrines, intellectual achievements, or literary productions of others without giving due credit—was commonly referred to as *κλοπή*, or plain theft.¹

I.

Early Greek authors, especially the poets or “minstrels” of the heroic and postheroic ages, did not recognize and probably did not even suspect the existence of “intellectual property.” Hence, as a rule, they completely failed to acknowledge their source or sources of information. At the same time, they did not hesitate in the least to use freely the literary, artistic, or “scientific” achievements of others. Down to the fifth century before Christ, the major literary works of the past were still considered to be the “common possession” of all. “Aeschylus was one of the great philosophers . . . who maintained that his tragedies were large cuts taken from Homer’s opulent dinners.”² Essentially the same general attitude towards “sources” may be observed among early “scientists,” historians (or chroniclers), and philosophers. Apparently the first author who in a way acknowledged his indebtedness to others seems to have been the Sophist Hippias of Elis.

Of what I have to say, some has perhaps already been said by Orpheus, some by Musaeus . . . some by Homer, some by Hesiod, some again by other poets, and some in the prose writings of the Greeks or the Barbarians. I have extracted from them and put together what was most important for, and in harmony with, my particular plan in order to compose my novel and many-sided work.³

Chrysippus, too, is credited with having cited "most of his au-

¹Diogenes Laertius (8.54) once uses the term λογοκλοπία. But Porphyry (in Eusebius, *Præparatio Evangelica* 10.3.1-26) and Clement of Alexandria (*Stromateis* 5.14.89-139; 6. chaps. 1-6), our two main authorities on this subject, as a rule employ the expression κλοπή or κλέπτειν. See also Athenaeus, *Deipnosophistae* 15.673E; Aristides, *Oratio* 3.1; Diogenes Laertius 5.92, *et passim*. The verb ὑφαίρεισθαι was sometimes used as a synonym for κλέπτειν (Diogenes Laertius 2.57; 9.134; Clement of Alexandria, *Stromateis* 5.14.91; 6.2.4, *et passim*). Other synonyms were ἀποσπλάω (Eusebius, *Præparatio Evangelica* 10.1.7), σπᾶω or ἀποσπᾶω (Clement of Alexandria, *Stromateis* 5.14.130 and 6.2.27; Themistius, *Oratio* 21), σκυωρεῖσθαι (Diogenes Laertius 2.61; Clement of Alexandria, *Stromateis* 6.2.27), ὠφελεῖσθαι (Hermogenes, *Περὶ ἰδεῶν* 2.423), σφετερίζεσθαι (Diodorus Siculus 4.66.6; Athenaeus, *Deipnosophistae* 15.673 ff.; Clement of Alexandria, *Stromateis* 6.2.27; 6.2.4; 6.4.35), ἰδιοποιεῖσθαι or ἐξιδιοποιεῖσθαι (Athenaeus, *Deipnosophistae* 15.673E), ἐπιφέρειν (*ibid.*, 3.84B), ἐκφέρειν (Clement of Alexandria, *Stromateis* 6.2.25; 6.2.26); ὑποβάλλεσθαι (Strabo 17.790; Diogenes Laertius 2.60; Aristophanes, *Birds* 750), λαμβάνειν παρὰ or ἀπὸ τινος (very frequent in Clement of Alexandria, *Stromateis*), ἐκλαμβάνειν, παραλαμβάνειν (Clement of Alexandria, *Stromateis* 5.14.91), ἀναλαμβάνειν, μεταγράφειν (*ibid.*, 6.2.5), and ἀντιγράφειν (Diogenes Laertius 10.7). Frequently such essentially harmless sounding terms as μεταποιεῖν (Clement of Alexandria, *Stromateis* 6.2.6), μεταφράζειν (*ibid.*), μεταβάλλειν

(*ibid.*, 6.2.26), μεταλάττω (*ibid.*), μιμῆσθαι (*ibid.*, 6.2.8 and 6.3.28), παραφράζειν (*ibid.*, 5.11.132 and 6.2.11), and παρίσασθαι (*ibid.*, 6.2.12) are employed to denote plagiarizing.

²Athenaeus, *Deipnosophistae* 8.347E.

³Diels-Kranz, *Die Fragmente der Vorsokratiker* (5th edit.): Hippias, frag. 6 (Vol. 2, p. 331). Clement of Alexandria, from whom the fragment is taken, uses this frank admission of Hippias to charge him with plagiarism: ". . . to show the propensity of the Greeks for plagiarism in expressions and doctrines, permit us to adduce the express testimony of Hippias . . ." (*Stromateis* 6.2.15).

⁴Diogenes Laertius 7.180. (See also nn. 78 and 79, and the text thereto.)

⁵*Ibid.*, 9.42.

⁶Herodotus 2.143 and 6.137. Herodotus, as a matter of fact, argues here against Hecataeus of Miletus and his reports. But in many other instances where he definitely derives his information from other authorities, including from Hecataeus, he refuses to give due credit to his sources.

⁷This policy subsequently exposed Herodotus to much criticism and even to the charge of plagiarism.

⁸Hence these standards did not really apply to primarily artistic, poetic, or philosophical productions.

⁹Pliny the Elder, *Naturalis Historia*, prooemium 21-23.

¹⁰From the remarks of Pliny it would follow that this duty or standard did not apply to essentially literary works. Philosophy apparently could be classified both as a literary or scientific endeavor.

thorities";⁴ and of Democritus it was said that he admitted quoting from Parmenides, Zeno (the Eleatic), and Protagoras of Abdera.⁵

The first of the Greek historians to refer to at least some of his sources was probably Herodotus, who twice cites Hecataeus of Miletus,⁶ although he repeatedly concedes, without going into details, however, that he relies on, and makes use of, the traditions or the reports of Greeks and barbarians.⁷

Only during late antiquity, it appears, some general but still rather vague standards were established concerning the author's obligation to give proper recognition to his authorities or sources of information. These standards, which might possibly have been motivated by Aristotelian scientism⁸ were stated by Pliny as follows:

You will deem it a proof of my pride that I have prefaced these volumes with the names of my authorities [and sources]. I have done so because it is, in my opinion, a pleasant thing, and one that shows an honorable modesty, to give due credit to those who were the means of one's accomplishments, and not to do as most of the authors to whom I have referred have done. For you must know that when collating my authorities I have found that the most professedly reliable and modern writers have copied the old authors word for word without proper acknowledgment, not in that valorous spirit of Virgil, for the purpose of rivalry, nor with the candor of Cicero who in his *Republic* declares himself a companion of Plato, and who in his *Consolation to his Daughter* stated, "I follow Crantor," and similarly as to Panaetius in his work *De Officiis*—works that you know to be worth having in one's hands every day and even learning by heart. Surely it is the mark of a mean spirit and an unfortunate disposition to prefer being detected as a thief rather than [acknowledging and] repaying a loan . . . especially as interest creates capital.⁹

In brief, the duty to cite sources and authorities apparently exists only in the case of a scientific treatise or perhaps an encyclopedic work intended to collate and transmit scientific information.¹⁰ Failure to comply with this duty, in particular the practice of reciting *verbatim* the doctrines or statements of the ancients without referring to them

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Anton-Hermann Chroust

directly, is simply theft (*furtum*). But it is not required that the author quote his source or sources in the case of *minutiae*.

Beginning with the fifth and especially the fourth century before Christ, the charge of "philosophical plagiarism" was made with increasing frequency and, it may be added, with mounting recklessness. Democritus, according to the testimony of Favorinus,¹¹ is said to have insisted concerning Anaxagoras, his alleged teacher, that "his [Anaxagoras's] views on the sun and the moon were not original, but of great antiquity; and that he had simply stolen them [from others]." Thrasyllus, in turn, denounced Democritus for "having

¹¹Diogenes Laertius 9.34.

¹²*Ibid.*, 9.38. Diogenes Laertius quotes also Glaucon of Rhegium as having stated that Democritus "was taught by one of the Pythagoreans." And Apollodorus of Cyzicus, according to Diogenes Laertius (9.38), insisted that Democritus "lived with Philolaus," the Pythagorean.

¹³Clement of Alexandria, *Stromateis* 6.2.27.

¹⁴Diogenes Laertius 8.8. By the authority of Aristoxenus, Diogenes also states (8.8 and 8.21) that Pythagoras had received the most important of his moral doctrines from the Delphic priestess Themistoclea.

¹⁵*Ibid.*, 8.54. Diogenes continues: "Neanthes reports that down to the time of Philolaus and Empedocles all Pythagoreans [Empedocles, according to this report, was a pupil of Pythagoras (*ibid.*, 8.54)] were admitted to these discussions. But when Empedocles published these discussions in a poem [and probably claimed them as his own original contributions], they [the Pythagoreans] passed a resolution that [these discussions] should not be imparted to any poet" (*ibid.*, 8.55).

¹⁶*Ibid.*, 8.55.

¹⁷*Ibid.*, 8.56.

¹⁸*Ibid.*, 8.70.

¹⁹Clement of Alexandria, *Stromateis* 6.2.26.

²⁰Diogenes Laertius 2.16.

²¹*Ibid.*, 2.18.

²²Athenaeus, *Deipnosophistae* 14.620D; Diogenes Laertius 8.63. Diogenes quotes this incident on the authority of Favo-

rinus. It appears, however, that Dicaearchus' *Olympic Festival*, as it is recorded by Athenaeus, constitutes the ultimate authority.

²³Diogenes Laertius 9.15.

²⁴Idomeneus of Eretria might have derived this story from Menedemus.

²⁵Diogenes Laertius 2.60. See also Athenaeus, *Deipnosophistae* 13.611D. Judging from the remark in Diogenes Laertius (2.62), Aristippus apparently also suspected Aeschines' authorship. Pisistratus of Ephesus, according to Diogenes Laertius 2.61, flatly denied that Aeschines ever wrote any dialogues. Diogenes Laertius continues: "However that may be, of the writings of Aeschines those stamped with a Socratic character are seven." The expression "Socratic character" (*Σωκρατικὸν ἦθος*) is ambiguous.

²⁶Diogenes Laertius 2.61.

²⁷*Ibid.*, 2.63.

²⁸The list of works ascribed to Antisthenes contains a *Cyrus*, a *Cyrus, or Of Sovereignty* (Diogenes Laertius 6.16), a *Cyrus, or the Beloved*, and a *Cyrus, or the Scout* (*ibid.*, 6.18); a *Greater Heracles, or Of Strength* (*ibid.*, 6.16), a *Heracles or Midas*, and a *Heracles, or Of Wisdom and Strength* (*ibid.*, 6.18); as well as an *Alcibiades* (*ibid.*, 6.18). The dependence of the *Alcibiades* of Aeschines on the *Alcibiades* of Antisthenes is fairly well established. See A.-H. Chroust, *Socrates: Man and Myth, The Two Socratic Apologies of Xenophon* (London: Routledge & Kegan Paul, 1957) pp. 175 ff.

taken all his ideas from Pythagoras [or the Pythagoreans].”¹² Heraclitus of Ephesus¹³ and Pythagoras¹⁴ were pointedly accused of having plagiarized Orpheus; and Timaeus insisted that Empedocles “was a pupil of Pythagoras, adding that, having been convicted at that time of stealing his discourses [from Pythagoras] he was, like Plato, excluded from taking part in the discussions of the school [of Pythagoras].”¹⁵ Theophrastus, according to Diogenes Laertius, asserted that Empedocles “imitated Parmenides in his verses, for Parmenides, too, had published his treatise *On Nature* in verse”;¹⁶ Hermippus, in the words of Diogenes Laertius, insisted that Empedocles imitated the writings of Xenophanes;¹⁷ and Diodorus of Ephesus maintained that Empedocles emulated Anaximander.¹⁸ Georgias of Leontini was blamed for having stolen from Melesagoras;¹⁹ and Socrates is said to have taken from Archelaus the notion that ethics is a philosophical discipline.²⁰ It was also suggested that Socrates wrote, or at least helped write, some of the tragedies subsequently published under the name of Euripides who, in turn, refused to acknowledge his indebtedness to Socrates.²¹ According to Dicaearchus, Cleomenes (the rhapsodist) recited at Olympia the *Rites of Purification* of Empedocles,²² although it is not clear from the text whether he did so in the name of Empedocles or in his own name, claiming the *Purifications* for himself. And it was said that Pausanias’s works were so similar to those of Heraclitus of Ephesus that he was publicly called “the imitator of Heraclitus.”²³

Menedemus of Eretria, and later also Idomeneus of Lampsacus,²⁴ maintained that the various dialogues which were circulated under the name of Aeschines of Sphettus in fact were authored by Socrates; after Socrates’s death, the story goes on, Xanthippe gave these dialogues to Aeschines, who then claimed their authorship.²⁵ Perseus, indeed, went so far as to attribute the majority of these dialogues to Pasiphon, a member of the School of Eretria, who inserted them among the works of Aeschines.²⁶ In addition, this same Aeschines, who also has been called “a close imitator of Gorgias of Leontini,”²⁷ was charged with having made extensive use of the *Little Cyrus*, the *Lesser Heracles*, and the *Alcibiades* of Antisthenes,²⁸ without, however, giving the latter any

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credit whatever.²⁹ This might also explain why "Lysias attacked Aeschines in a speech which he entitled *On Dishonesty*,"³⁰ In any event, when Aeschines "was reading one [of these dialogues] at Megara, Aristippus challenged him with the remark, 'Where did you get that, you thief?'"³¹

²⁹Diogenes Laertius 2.61.

³⁰*Ibid.*, 2.63.

³¹*Ibid.*, 2.62.

³²Plato himself apparently was plagiarized by Dionysius the Younger, the tyrant of Syracuse and friend of Plato. See Plato (P), *Seventh Epistle* 341AB and *ibid.* 344D-345A. According to this report, Plato had once discussed some philosophical topics in the presence of Dionysius, without however penetrating the subject. Dionysius, it seems, subsequently published a résumé of this discussion under his own name, thus creating the impression that this was his own original philosophy. In his gentle refutation of Dionysius, Plato merely stresses the fact that Dionysius was not, and could not possibly have been, conversant with Plato's ultimate views on this subject. But Plato was not interested in pointing out a plagiarism as such.

³³Athenaeus, *Deipnosophistae* 11.508C.

³⁴Isocrates himself was an implacable enemy of Plato.

³⁵Athenaeus, *Deipnosophistae* 11.508CD. This particular charge apparently was contained in a special work or diatribe (διατριβή), the full title of which was probably *Καταδρομή τῆς Πλατωνος διατριβῆς*.

³⁶See *infra*.

³⁷Clement of Alexandria, *Stromateis* 5.14.90; 5.14.92; 5.14.96; 4.14.135. Clement, it seems, insists that "the whole of the Hellenic wisdom was derived (or 'stolen') from the philosophy of the barbarians" (*ibid.* 5.14.141). The barbarians might very well be the peoples of the Near East, including the Jews and the Egyptians. As a matter of fact, the whole of the *Stromateis*, Book VI, chaps. 4 ff., is dedicated to the task of proving that the Greeks drew most of their philosophical teachings from the Egyptians and Indians.

³⁸The Homeric passage would be *Iliad* 16.856. Plato himself quotes (and disapproves of) this Homeric passage in *Republic* 386D.

³⁹Athenaeus, *Deipnosophistae* 11.508C ff.

⁴⁰Clement of Alexandria, *Stromateis* 6.2.27. Clement adds that Pythagoras derived this doctrine from the Egyptians.

⁴¹Diogenes Laertius 8.54 and 8.55.

⁴²The reference seems to be to Aristotle, *Poetics* 1447 b 10. See also Aristotle, frag. 72 (Rose). Plato himself ascribes the use of the dialogue to Parmenides (*Sophist* 217C). Diogenes Laertius (3.48) claims that Zeno the Eleatic was the inventor of the dialogue, but he also quotes Aristotle (on the authority of Favorinus) as having said that Alexamenus of Styra or Teos was the first to write dialogues. Diogenes Laertius, however, extolls Plato for the beauty, inventiveness, and perfection in using the dialogue form. Even Simon the Shoemaker had been credited with the invention of the Socratic dialogue (Diogenes Laertius 2.123). It is most unlikely that either Zeno or Parmenides ever wrote any dialogues. For Zeno, see Plato, *Parmenides* 127C; Aristotle, *Topics* 170b22; Simplicius, *Adversus Physicos* 139.5. The reference to Parmenides may actually be based on a hilarious confusion of the philosopher Parmenides and the Platonic dialogue *Parmenides*.

⁴³Athenaeus, *Deipnosophistae* 11.505BC.

⁴⁴Diogenes Laertius 3.18. This passage would indicate that Plato borrowed the characterizations of the main actors in his dialogues from the *Mimes* of Sophron. Diogenes Laertius continues: "A copy of the *Mimes*, it is said, was actually found under his [Plato's] pillow" (3.18). See also Valerius Maximus 8.7.3. Aristotle, *Poetics* 1447b9 (see also *Περὶ ποιητῶν*, frag. 61,

Plato himself did not escape the charge of plagiarism:³²

If one should go through his [Plato's] *Timaeus* and his *Gorgias* and all other such dialogues . . . one could not admire him for them because one could get all this [information] from other authorities either better or, at least, not worse.³³

Theopompus of Chios, the disciple of Isocrates,³⁴ bluntly asserted that "the majority of his [Plato's] dialogues are useless and in error"; that a great many of them are borrowed from the discourses of Aristippus, some even from those of Antisthenes, and the majority from those of Bryson of Heraclea.³⁵ Clement of Alexandria, a most untrustworthy witness,³⁶ in a similar vein maintained that according to a well-founded tradition, Plato derived much of his philosophy from the "Barbarians."³⁷ The allegations that Plato's doctrine of the immortality of the soul was lifted from Homer³⁸ may go back to Theopompus,³⁹ while the story that he stole this doctrine from the Pythagoreans is recorded by Clement of Alexandria.⁴⁰ *Timaeus*, in the ninth book of his *Histories*, states that Plato was excluded from the discussions, or philosophical disputations, of the Pythagoreans, because he plagiarized them for his own use;⁴¹ and Pontianus, in his harangue of Plato, contended that Plato

wrote . . . dialogues, the pattern of which he did not invent himself. Before his time, in fact, Alexamenus of Teos had invented this type of literature, as Nicias of Nicaea and Sotion attest . . . and the most learned Aristotle⁴² expressly declares that Alexamenus wrote dialogues before Plato.⁴³

Finally, it was also suggested that in his dialogues Plato "drew the characters in the style of . . . [Sophron]."⁴⁴

Aristoxenus, the implacable enemy of Plato and the Platonists, maintained, according to the testimony of Favorinus, that Plato copied

Rose), classifies together the *Mimes* of Sophron, the *Mimes* of Xenarchus, and the dialogues of Plato. But he does not insinuate that Plato's dialogues are dependent on the *Mimes* of Sophron (or those of Xenarchus). There is only one definite reference to Sophron's

Mimes in Plato's works; namely, *Republic* 451C, where Plato distinguishes between the mimic roles played by men and those roles played by women. Also, the quotations found in *Republic* 607B might have been borrowed from Sophron.

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most of his *Republic* from Protagoras's 'Αντιλογικά;⁴⁵ and Alcinus, a "historian" and contemporary of Aristoxenus, in his four-volume work entitled Πρὸς Ἀμόνταν asserted that Plato evidently "borrowed heavily from Epicharmus, using his very words."⁴⁶ Timon of Phlius, the

⁴⁵Diogenes Laertius 3.37. This allegation apparently was repeated by Favorinus. (See *ibid.*, Laertius 3.57). Favorinus probably drew his information from Aristoxenus.

⁴⁶*Ibid.*, 3.9-10: "Just consider. Plato asserts that the object of the senses is that which never abides in quantity or quality, but is ever in flux and change. . . . But the object of thought is something constant from which nothing is subtracted and to which nothing is added. . . . And, indeed, Epicharmus has expressed himself plainly about the objects of the senses and the objects of thought." Diogenes Laertius continues: "These and similar instances Alcinus notes . . . pointing out the assistance which Plato derived from Epicharmus" (3.17). See also the whole of Diogenes Laertius 3.9-17.

⁴⁷According to Gellius, *Attic Nights* 3.17.4, Plato paid 10,000 *denarii*; according to Hermippus (Diogenes Laertius 8.85), 40 Alexandrian *minae*; and according to Diogenes Laertius 8.15, 100 *minae*. Others, again, say that he was given this book—Philolaus's *Περὶ φύσεως*—as a present or token of gratitude for having rescued a disciple of Philolaus. Cicero, *De Republica* 1.10.16, writes that Plato received this work as a personal present from Philolaus; and Satyrus (Diogenes Laertius 3.9; 8.15) records that Plato wrote to Dion asking him to purchase three Pythagorean works composed by Philolaus for 100 *minae*. Jamblichus, in his *Vita Pythagorae* 199, maintains that Dion bought this work from the heirs of Philolaus. (See also Diogenes Laertius 8.84). Thus it seems fairly well established that Plato bought the chief work or works of Philolaus the Pythagorean. If this be true, then Clement of Alexandria's allegation that Plato borrowed from the Pythagoreans (or

from Pythagoras) is probably correct (*Stromateis* 6.2.27). See also text, *infra*. Diogenes Laertius also mentions a letter of the Pythagorean Archytas, addressed to Plato, in which the former writes that he had been able to get certain philosophical works for Plato, "all of which we have sent on to you."

⁴⁸Gellius, *Attic Nights* 3.17.6. See also Diogenes Laertius 8.85: "He [Philolaus] wrote one book, and it was this book which, according to Hermippus, some authors claimed that Plato, the philosopher, when he went to Sicily to the court of Dionysius, bought from Philolaus' relatives . . . from which also the [Platonic] *Timaeus* was copied." That Plato is not the only ancient philosopher or author charged with having plagiarized Pythagoras or the Pythagoreans might be gathered from Diogenes Laertius 8.54, where Empedocles is suspected by Timaeus of having committed the same crime. See n. 15.

⁴⁹Apparently by Crantor.

⁵⁰In Plato's fragmentary dialogue *Critias*.

⁵¹Proclus, *Commentarius in Platonis Timaeum* 1.76.2 (ed. Diel).

⁵²*Politics*, 1267b22 ff.

⁵³Eusebius, *Praeparatio Evangelica* 10.3.24-25. See also n. 104.

⁵⁴This is also one of the reasons why the writings of Plato have become one of the great problems of present-day historical and literary scholarship.

⁵⁵Diogenes Laertius 5.92.

⁵⁶This work is listed as *Of the Age of Homer and Hesiod*, two books, in the catalogue of the works of Heracleides of Pontus (Diogenes Laertius 5.87). A comparison of Plutarch, *Pericles* 27, and Athenaeus, *Deipnosophistae* 12.533E ff., should indicate that the work of Heracleides and that of Chamaeleon are very similar indeed. This then would support the allegation of Chamaeleon.

sillographer, reported that Plato paid a fantastic price⁴⁷ for a work of the Pythagoreans, possibly for the Περὶ φύσεως of Philolaus, from which book he copied his *Timaeus* or, at least, part of it.⁴⁸ Proclus records that already during Plato's lifetime the latter was charged⁴⁹ with having stolen the Atlantis myth and especially the description of the ideal city of Atlantis⁵⁰ from the ancient Egyptians.⁵¹ Aristotle, at least by indirection, also seems to suggest that certain ideas advanced by Plato in his *Republic*, including the subdivision of the citizens into guardians, warriors, and husbandmen, might originally have been devised by Hippodamus of Miletus.⁵² Porphyry has preserved a report according to which the Peripatetic Prosenes had charged Plato with having made use of his many intellectual predecessors and having in all likelihood borrowed heavily from them. Prosenes also is said to have declared that if more of the pre-Platonic philosophical literature had survived, he could establish and prove the great many literary thefts committed by Plato.⁵³

The truth about Plato is that in keeping with the prevailing tradition he was extremely reluctant to reveal by direct reference the many sources and authorities for the doctrines and theories which he advanced. He displayed an equal reluctance to indicate the authorities for the views which he rejects, combats, or ridicules. This pronounced attitude, which practically amounted to a policy, together with the fact that with the exception of his personal followers he apparently was not very popular among his contemporaries or with later generations, soon made him one of the preferred targets for charges of plagiarism.⁵⁴

Heracleides of Pontus likewise was severely criticized by Chamaeleon of Pontus⁵⁵ for having plagiarized his, Chamaeleon's, work on Homer and Hesiod.⁵⁶ It was also rumored that Xenophon "made Thucydides famous by publishing his *History*, which had remained unknown, and which he [Xenophon] might have appropriated for his own use."⁵⁷ It was said of Arcesilaus, the founder of the so-called Middle Academy, that he "was caught copying (or editing) certain works of Crantor. . . .

And some represent him as an imitator of Pyrrho [of Elis]. . . ."⁵⁸ Eusebius of Caesarea openly denounced the Neoplatonist Hierocles, the governor of Bithynia and a tenacious antagonist of Christianity,⁵⁹ for having copied *verbatim* all his philosophical works from older sources.⁶⁰ Athenaeus goes to great length in charging Hephaestion with having plagiarized him extensively:

⁵⁷Diogenes Laertius 2.57. The reference is obviously to Xenophon's *Hellenica*. A comparison of Thucydides' (unfinished) *Peloponnesian War* and Xenophon's *Hellenica* should make it fairly clear that this accusation is probably groundless. But since Xenophon's in a way is a sort of continuation of Thucydides' work, there naturally exists the remote possibility that Xenophon might have rewritten, restyled, and perhaps somewhat reoriented what could originally have been the now "missing" part of Thucydides' *Peloponnesian War*, and that he published it under his own name as part (perhaps the early part) of his *Hellenica*.

⁵⁸Diogenes Laertius 4.32.

⁵⁹This Hierocles might be the anonymous pagan philosopher with whom Macarius, the bishop of Magnesia, had a long and bitter dispute concerning the merits of Christianity. See Macarius, *Apologia* (ed. Blondel). Some scholars maintain, however, that Macarius's opponent was Porphyry and that Macarius used an anonymous excerpt from Porphyry's *Κατά χριστιανών*. Aeneas of Gaza, it will be remembered, was a disciple of Hierocles.

⁶⁰*Adversus Hieroclem* 1.369.4 ff. (ed. Kayser).

⁶¹A Peripatetic philosopher during the time of the Antonines and probably the teacher of Athenaeus. None of Adrastus's original writings have been preserved. Theon of Smyrna, Proclus, Plotinus, Favorinus, Eulogius, Anatolius of Alexandria, and Chalcidius in part were influenced by the teachings of Adrastus. As a matter of fact, he is the vital connecting link between Posidonius (and his all-important *Commentary* to the *Timaeus* of Plato) and Chalcidius.

⁶²The reference is to Xenophon, *Memorabilia* 1.6.1.

⁶³Athenaeus, *Deipnosophistae* 15.673E ff.

⁶⁴Diogenes Laertius 6.84. Diogenes Laertius (6.98) also reports that "there is current a work of Crates, entitled *Epistles*, which contains excellent philosophy in a style which at times resembles Plato."

⁶⁵Diogenes Laertius 6.100.

⁶⁶Clement of Alexandria, *Stromateis* 6.2.27.

⁶⁷It must seriously be doubted whether Clement of Alexandria had even an inkling of the many and at times desperately difficult problems connected with the origin, nature, and authenticity of some of the works traditionally ascribed to Aristotle. Of late a rather extravagant thesis concerning Aristotle's writings has been advanced by Joseph Zurcher, *Aristoteles' Werk und Geist* (Paderborn, 1952). A short résumé of this book can be found in I. Brady, "The New Aristotle," in the *New Scholasticism*, XXVII (1953), 305-34. According to Zurcher, Aristotle was really a Platonist who borrowed many of his main ideas from Plato. The Aristotelian elements in the writings ascribed to Aristotle are actually by Theophrastus. If Zurcher's thesis were correct, then Clement's allegation might be true, at least in part. There exists no reason, however, why Zurcher's thesis should be accepted. See A.-H. Chrout, "The Composition of Aristotle's *Metaphysics*," *New Scholasticism*, XXVIII (1954), 58 ff., especially pp. 65-66 and n. 27.

⁶⁸*Stromateis* 5.14.98.

⁶⁹As to the unreliability of Aristobolus, see the text *infra*.

⁷⁰M. Pupius Piso Frugi, to be exact.

⁷¹Cicero, *De Finibus* 5.25.74.

Hephaestion, who accuses everyone else of literary theft [κλοπή] took the solution from me, but claimed it for himself when publishing his work on . . . : Anacreon. . . . And the same Hephaestion proved a like thief in the case of the noble Adrastus [of Aphrodisias].⁶¹ For Adrastus had published five books, *On Questions of History and Style in the Ethics of Theophrastus*, and a sixth book, *On the Nicomachean Ethics of Aristotle* . . . saying a great deal about Antiphon. But Hephaestion stole all this also and wrote a book, *On the Antiphon of Xenophon's Memorabilia*,⁶² although he had discovered nothing additional of his own. . . .⁶³

Onesicritus, a pupil of Diogenes of Sinope, wrote an *Education of Alexander* which he fashioned closely after the *Cyropaedia* of Xenophon: "In their diction both [Onesicritus and Xenophon] are not unlike," Diogenes Laertius comments, "except that Onesicritus, as might be expected from a mere imitator, falls short of his model."⁶⁴ And of Menippus the Cynic it was said that "experts doubted the genuineness of the works attributed to him, alleging them to be by Dionysius and Zopyrus of Colophon, who, writing them for a joke, made them over to Menippus."⁶⁵ It is not impossible that Menippus subsequently published them as his own original productions.

Neither did Aristotle escape the charge of plagiarism. "Aristotle [is said to have] derived the majority as well as the most important aspects of his [philosophical] teachings from Plato."⁶⁶ Since this particular charge is made by the wholly unreliable Clement of Alexandria, it can safely be disregarded.⁶⁷ Clement, on the authority of the equally untrustworthy Aristobulus, also claims that the whole of Peripatetic (or Aristotelian) philosophy "was derived from the law of Moses and from the other prophets"⁶⁸—an utterly ridiculous statement.⁶⁹

The Stoics in particular came in for much recrimination. They were accused by the Peripatetics⁷⁰ of having "stolen" their whole philosophy from them: "These people [the Stoics], to be sure, have taken from us [the Peripatetics] not just one idea here and another idea there. They took over and appropriated our whole philosophy"⁷¹—a thesis it would be difficult to substantiate, even though Stoic

philosophy, especially late Stoicism, contains a certain amount of Aristotelian thought. "And," Cicero continues, "like all other thieves of this kind who change the 'trade marks' of the things they have stolen, these [the Stoics], in order to use our teachings as their own, changed our particular nomenclature."⁷² Polemon, the Academician, is said to have addressed Zeno, the Stoic, as follows: "You slip in, Zeno, by the back door—I am quite aware of this—you steal my teachings and then give them a Phoenician make-up."⁷³ According to Clement of Alexandria, who apparently denies that any Greek philosopher ever produced an original thought of his own, some followers of Plato vigorously asserted that the Stoics had been charged with

⁷²*Ibid.*

⁷³Diogenes Laertius 7.25. The reference to the "Phoenician make-up" is probably a reference to Zeno's Phoenician origin; but it might also contain an allusion to a kind of camouflaging with red paint or painting over someone else's property with red paint, thus making it appear as one's own. This would imply, then, that Zeno merely changed the nomenclature used by Polemon. See n. 72 and the text thereto.

⁷⁴*Stromateis* 2.6.27 and 5.14.96.

⁷⁵*Ibid.*, 5.14.106.

⁷⁶*Ibid.*, 6.2.27. Diogenes Laertius (7.33) reports that in his *Republic* Zeno apparently used ideas that can be found in the "political" writings of Plato. See also Diogenes Laertius 7.131.

⁷⁷Diogenes Laertius 7.180.

⁷⁸*Ibid.*, 7.181. (See n. 4.)

⁷⁹*Ibid.*, 10.26.

⁸⁰According to Diogenes Laertius 10.2, Epicurus read some of the works of Democritus at the age of fourteen. (Diogenes Laertius 10.14 reduces the age to twelve.) On the island of Samos he heard the Platonist Pamphilus (*ibid.*, 10.14; Cicero, *De Natura Deorum* 1.2.72). Nausiphanes, a follower of Democritus, probably had a lasting influence on Epicurus and his thought (Cicero, *De Natura Deorum* 1.26.73; Diogenes Laertius 10.12 and 10.14). In later years he emphatically, though not convincingly, denied this influence (Diogenes Laertius 10.12). According

to Diogenes Laertius 10.12-13, he also was acquainted with the teachings of Anaxagoras, Archelaus, Praxiphanes (a pupil of Theophrastus⁸¹), and Xenocrates. The ἀπαταλεια of Democritus is said to have become the ἀθαμβια (or ἀθαβια—fearlessness) of Epicurus (Clement of Alexandria, *Stromateis* 2.21.130); and the logic (*Canon*) of Epicurus supposedly is based on the logical teachings (the *Tripod*) of Nausiphanes (Diogenes Laertius 10.14). For some time Epicurus called himself a Democritean (Plutarch, *Adversus Coloten* 3.3); but later he denied any and all connections with the thought of Democritus, whom he called a nonsense-monger (Diogenes Laertius 10.8). He went so far as to maintain that he never had a teacher, that no one ever taught him anything, and that he was a complete autodidact (Cicero, *De Natura Deorum* 1.26.72 and 1.33.93; Sextus Empiricus, *Adversus Mathematicos* 1.3).

⁸¹Diogenes Laertius 10.7.

⁸²*Ibid.*

⁸³Perhaps the expression "shameless" in Diogenes Laertius 10.3 refers to Epicurus's plagiarisms.

⁸⁴Clement of Alexandria, *Stromateis* 6.2.27.

⁸⁵Diogenes Laertius 2.97.

⁸⁶*Ibid.*, 10.4.

⁸⁷*Adversus Mathematicos* 1.273.

⁸⁸Homer, *Iliad* 1.469.

⁸⁹*Ibid.*, 24.54.

⁹⁰Diogenes Laertius 10.26.

⁹¹*Ibid.*, 10.26.

having pilfered the majority as well as the most important of their doctrines from Plato;⁷⁴ and the same Clement, who also observes a certain dependence of the Stoics on Heraclitus of Ephesus,⁷⁵ informs us that according to tradition Zeno in particular had "borrowed" heavily from Plato.⁷⁶ Diogenes Laertius tells the story that Chrysippus "copied out the whole of Euripides' *Medea*"⁷⁷ and Apollodorus of Athens maintained that "if one were to strip the works of Chrysippus of all extraneous quotations, his pages would be left bare."⁷⁸ It is not clear, however, whether Chrysippus gave due credit to the fact that he made use of many "extraneous quotations." Carneades, according to Diogenes Laertius, went so far as to call Chrysippus "the literary parasite of Epicurus."⁷⁹

Epicurus, as is well known, wished to create the (obviously false) impression that in his philosophical doctrines he was a complete *αὐτοδίδακτος*.⁸⁰ His former disciple Timocrates, the brother of Hermodorus, claimed, however, that "most of what is contained in the thirty-seven books *On Nature* [written by Epicurus] is a mere repetition of what previously had been said by others."⁸¹ Timocrates also insisted that Epicurus "had copied his *Canon* out of Nausiphanes' *Τριπτοδος*."⁸² In later years it was suggested that Epicurus had borrowed—some used the term "stolen"⁸³—a great many ideas from Democritus;⁸⁴ it was suggested that he had borrowed especially from *Of the Gods*, a book by Theodorus the Atheist, "most of what he wrote on the subject."⁸⁵ It was also said that "he put forward as his own the teachings of Democritus about atoms, and the teachings of Aristippus about pleasure."⁸⁶ According to Sextus Empiricus, he derived certain of his basic doctrines from the ancient poets:⁸⁷ from Homer⁸⁸ his definition of pleasure, and from Epicharmus and Homer⁸⁹ his teachings about death. Diogenes Laertius informs us that Epicurus's many writings "contain not a single citation from other authors";⁹⁰ but Carneades insists that "he has so many citations that they alone fill his books."⁹¹

These are some of the recorded instances where philosophers of Greek antiquity, rightly or wrongly, have been charged with plagiarism. Since much, and perhaps too much, of the original ancient literature either has been lost or has come down to us in an altered and even mutilated form, it is difficult and, in most instances,

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impossible to verify these charges. It remains now to discuss some of the ancient authors or critics who have made it their particular business to ferret out and ascertain philosophical plagiarisms.

II.

Already in late antiquity special efforts were made to establish on the basis of "critical" investigations a number of philosophical plagiarisms. These efforts probably were prompted by the various and frequently random charges and countercharges of borrowings made by rival philosophers or competing schools of philosophy. At the same time, an ever increasing number of learned commentaries, synopses, and *florilegia* made their appearance, which among other matters also collated, compared, and analyzed parallel or merely similar ideas,

⁹²Of great importance were also the works of grammarians and the several *Περὶ ἐρρημάτων* which frequently attempted to establish the seniority among competing ideas, doctrines, or writings.

⁹³In *Φιλόλογος ἀκρόασις*, which in part has been preserved by Eusebius, *Praeparatio Evangelica* 10.3.1-24.

⁹⁴In *Stromateis*, Book V, chap. 14, and Book VI, chap. 2, *et passim*.

⁹⁵In *Praeparatio Evangelica* 10.1.1-9; 10.2.1-14; 10.3.1-26.

⁹⁶*Ibid.*, 10.3.12. According to Porphyry (Eusebius), Aristophanes of Byzantium wrote mostly on the alleged plagiarisms of Menander. It is probable, however, that he wrote an *On Parallels* (cf. *ibid.*, 10.3.12: *Περὶ παραλλήλοις* rather than an *On Plagiarisms* (*Περὶ κλοπαῖς*), and that it was Porphyry who added the term plagiarism.

⁹⁷Eusebius, *Praeparatio Evangelica* 10.3.12. Latinus, too, apparently dealt with the "plagiarisms" of Menander.

⁹⁸*Ibid.*, 10.3.13. Caecilius, too, seems to have written on the "plagiarisms" of Menander.

⁹⁹*Ibid.*, 10.3.17. Philostratus of Alexandria charged Sophocles with plagiarism.

¹⁰⁰*Ibid.*, 10.3.23. Like some of his predecessors, Lysimachus charged Ephorus with plagiarism.

¹⁰¹*Ibid.* In his *Ἰχνηταί*, Pollio(n)

accused a number of historians with plagiarism, such as Herodotus (who stole from Hecataeus), Ctesias, and Theopompus, who, in the eleventh book of his *Φιλιστικά* (11 B, frag. 110; Mueller, *Fragmenta Historicorum Graecorum*, p. 295) stole from the *Areopagiticus* of Isocrates (*Praeparatio Evangelica* 10.3.4). The passage from which Theopompus allegedly stole is *Areopagiticus* 7.4. According to Pollio(n), Theopompus committed a great many literary thefts. See *Praeparatio Evangelica* 10.3.9-11.

¹⁰²Eusebius, *Praeparatio Evangelica* 10.3.23. Aretades, it appears, discovered, or claims to have discovered, a great many literary plagiarisms among Greek poets. It should be noted that none of the authors on plagiarism, mentioned by Porphyry, has dealt with philosophical plagiarisms, at least not according to the report of Porphyry.

¹⁰³See n. 93. Eusebius quotes Porphyry's work primarily in order to show that the Jewish or Christian authors (see *infra*) were not the only ones or even the first ones to accuse the Greeks of plagiarism, but that the Greeks themselves had already done so for some time (*Praeparatio Evangelica* 10.1.7).

¹⁰⁴*Ibid.*, 10.3.24-25. See also n. 53.

statements, and expressions.⁹² As a result of all this, a new type of "scholarly" literature developed which concerned itself exclusively with problems of plagiarism. Unfortunately, only a few fragments of this literature have survived, most through the writings of Porphyry,⁹³ Clement of Alexandria,⁹⁴ and Eusebius of Caesarea.⁹⁵

Porphyry mentions a number of authors who had composed specific and detailed works or critical studies on plagiarism; namely, Aristophanes of Byzantium,⁹⁶ Latinus,⁹⁷ Caecilius of Calacte,⁹⁸ Philostratus of Alexandria,⁹⁹ Lysimachus,¹⁰⁰ Pollio(n),¹⁰¹ and Aretades.¹⁰² These men probably supplied Porphyry—and, through Porphyry, Eusebius and perhaps Clement of Alexandria—with some information concerning ancient plagiarism. With the exception of a few and perhaps seriously distorted remarks found in the *Φιλολογος ἀκρόασις* of Porphyry, all or nearly all of their critical studies are lost. Hence it is impossible to verify their allegations or determine their influence on later authors.

Porphyry, who, besides his extensive philosophical works, also engaged in critical philological, historical, and literary studies, recorded, collated, and probably also unearthed (or thought he had unearthed) a number of plagiarisms committed by some of his predecessors. He seems to have reported certain of his findings in the *Φιλολογος ἀκρόασις* a work of which an excerpt (or abbreviation) or fragment is preserved in the *Preparatio Evangelica*¹⁰³ of Eusebius of Caesarea. The only philosophical plagiarism which, according to the report of Eusebius, was recorded by Porphyry is the charge made by Prosenes the Peripatetic that Plato not only had made extensive use of his predecessors but also had pilfered them on a huge scale. But for the nearly complete loss of the pre-Platonic literature, Prosenes continues, we might possibly detect even more literary thefts committed by Plato, who, among other things, probably also borrowed from Protagoras's *Λόγος περὶ τοῦ ὄντος*.¹⁰⁴

Eusebius of Caesarea, in his search for plagiarism, relied mostly on Porphyry and Clement of Alexandria, and wished to impress his readers with the fact that most and perhaps all of Hellenic philosophy is not perchance an original contribution of the Greeks but rather is borrowed, stolen, or plagiarized directly from older and presumably

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more advanced civilizations—especially from the Jewish people, or, to be more exact, from the scriptural tradition of the Jews. Clement of Alexandria, one of Eusebius's sources, in turn seems to have derived some of his information about Greek philosophical plagiarism from the Judaeo-Hellenistic Apologists (but not necessarily from Aristobulus), who flourished in Alexandria from the third century before Christ.

The most prominent and certainly the most influential of the early—that is, pre-Philonic—Judaeo-Hellenistic Apologists was probably Aristobulus of Alexandria, who in an almost fanatical spirit of chauvinism insisted that the teachings and sayings of the Greek philosophers and poets were either based on, or immediately derived from, the Old Testament.¹⁰⁵ In particular, he claimed that Pythagoras, Socrates, Plato, and Aristotle had found their basic doctrines in the Scriptures.¹⁰⁶ This theory, it will be noted, is of great historical significance. With some modifications it was adopted and for a long period of time adhered to by many of the early, and even later, Christian theologians, who thus found it possible to uphold many of the philosophical tenets of the Greeks and Romans and, at the same

¹⁰⁵In order to prove his extravagant thesis, Aristobulus not only falsified Greek texts; he also tried, through fanciful allegorical interpretations of certain biblical passages, to achieve a plausible *rapprochement* of the Scriptures and the writings of certain Greek philosophers and poets. In addition, in order further to strengthen his thesis, he invented the incredible story that the Old Testament had several times been translated into Greek at a very early period.

¹⁰⁶Eusebius, *Praeparatio Evangelica* 13.12.1 ff. See also *ibid.* 8.9.38 and 13.11.3; Clement of Alexandria, *Stromateis* 1.15.72; 5.14.97, *et passim*.

¹⁰⁷Clement of Alexandria, *Stromateis* 5.14.89-139.

¹⁰⁸*Ibid.*, 6.2.4. Clement prefaces his report on Greek plagiarisms with the statement: "Let us adduce the Greeks as witnesses against themselves to the theft" (*ibid.*).

¹⁰⁹*Ibid.*, 6.2.25.

¹¹⁰*Ibid.*, 6.2.5-24.

¹¹¹*Ibid.*, 6.2.25.

¹¹²*Ibid.*, 6.2.25-27.

¹¹³*Ibid.*, 6.2.16.

¹¹⁴*Ibid.*, 6.2.17.

¹¹⁵*Ibid.* Thus we are told that Empedocles derived his doctrine of the four basic elements from Athamas's thesis that "there are four roots—fire, water, air, and earth." From these sprang everything that is generated.

¹¹⁶*Ibid.*

¹¹⁷*Ibid.*, 6.2.23. Aristophanes' statement that "to think and to act are the same thing" supposedly is identical with Parmenides' assertion that "thinking and being are one and the same."

¹¹⁸*Ibid.*, 6.2.24.

¹¹⁹*Ibid.*

¹²⁰*Ibid.*

¹²¹*Ibid.*, 6.2.25-27. See also *ibid.*, 6.2.25: "They [the Greek authors] will also be convicted of the possession of what is stolen wholesale. Stealing wholesale what is the production of others, they have published it as their own. . . ."

¹²²*Ibid.*, 6.2.25.

time, proclaim the absolute superiority and greater antiquity of the Judaeo-Christian teachings over those of the Greeks.

Like Aristobulus, and essentially for the same reasons, Clement of Alexandria, in the last part of Book V of the *Stromateis*,¹⁰⁷ goes to great length in his effort to prove that the whole of Greek philosophy or philosophical wisdom had been pilfered from the Scriptures. In order further to substantiate his thesis, he demonstrates in Book VI, Chapters 2-4, of the *Stromateis* that the Greek poets and philosophers extensively and rather shamelessly stole from one another. This being so, how much more readily would they steal from foreigners.

Inasmuch as they pilfer from one another, they establish the fact that they are thieves . . . clandestinely appropriating . . . the truth which belongs to us. If they do not keep their hands off each other, they will hardly keep them off our authors.¹⁰⁸

Clement then proceeds in a totally disorderly and confusing manner to enumerate approximately sixty instances of alleged plagiarisms, which he tries to support with about one hundred and eighty illustrations or quotations chosen at random. First he points out, citing examples, where in his opinion one Greek author borrowed the ideas, expressions, or statements (*δικάνοιαι καὶ λέξεις*)¹⁰⁹ of another Greek author.¹¹⁰ Then he lists those instances where a Greek writer had lifted or appropriated whole sections and passages (*ὀλοκλήρα φωρία*)¹¹¹ from another Greek writer.¹¹² In sum, the first part deals with petty thievery, while the second part is concerned with wholesale theft.

Among the incidents of petty thievery, Clement refers to the following authors: Xenophon stole from Sophocles;¹¹³ Heraclitus of Ephesus from Orpheus;¹¹⁴ Empedocles from the Pythagorean, Athanes;¹¹⁵ Menander from Plato;¹¹⁶ Aristophanes from Parmenides;¹¹⁷ Euripides from Empedocles;¹¹⁸ and Epicurus from Euripides,¹¹⁹ as well as from Aristophanes.¹²⁰ Then follow the relatively few cases where Clement believes to have uncovered instances of wholesale theft; that is, instances where one Greek author had lifted major sections from the writings of another Greek author.¹²¹ Eugammon of Cyrene, we are told, pilfered from Musaeus the whole book which the latter had composed about the Thesbrotians;¹²² Peisander of Camirus has

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plagiarized wholesale the *Heraclea* of Pisinus of Lindus; and Panyasis of Halicarnassus has taken over a large part of the *Capture of Oechalia* composed by Cleophilus of Samos.¹²³ Homer, too, is accused of major thefts from Orpheus;¹²⁴ Hesiod from Musaeus;¹²⁵ Aristophanes from Cratinus;¹²⁶ the comic poet Plato, from Aristophanes (and vice-versa);¹²⁷ and Aratus (Aristophanes?) from the comic poet, Philémon.¹²⁸ In addition, a goodly number of other writers are mentioned as major plagiarists; Gorgias of Leontini (and Eudemus of Naxos), who presumably stole important ideas from Melesagoras;¹²⁹ Heraclitus of Ephesus, who allegedly “took a great deal from Orpheus”;¹³⁰ Aristotle, who “pilfered the majority of his most important teachings from Plato”;¹³¹ and Epicurus, who derived his main doctrines from Democritus.¹³² “Life would fail me,” Clement concludes in a rather condescending manner, “were I to undertake to go over the subject [Greek philosophical plagiarism] in detail.”¹³³

Clement’s allegations, it goes without saying, cannot be taken at their face value. In his apologetic fervor he definitely overshoots his own target. Wherever he believes to have detected suspicious sim-

¹²³*Ibid.* Since nearly all the works mentioned by Clement in this connection are completely lost, Clement’s allegations of theft or plagiarism can no longer be verified. As regards the theft of Eugammon from Musaeus, it might be intimated here that it is more likely that the poems which were circulated under the name of Musaeus were plagiarized from Eugammon. According to Pausanias 1.22.7, with the possible exception of the *Hymn to Demeter*, most of the poems ascribed to Musaeus were forgeries.

¹²⁴*Ibid.*, 6.2.26.

¹²⁵*Ibid.*

¹²⁶*Ibid.*

¹²⁷*Ibid.*

¹²⁸*Ibid.*

¹²⁹*Ibid.*, 6.2.27.

¹³⁰*Ibid.*

¹³¹*Ibid.*

¹³²*Ibid.*

¹³³*Ibid.*

¹³⁴The anonymous author of *Περὶ ὁφείας*, chap. 13, points out that imitation (μίμησις) of the great poets of old is by no means plagiarism (κλοπή). Plato, we

are told, rose to such eminence exactly because he competed with Homer, because he used Homer as his model. See also what Pliny had to say about Virgil (n. 9). Our anonymous author also quotes with much approval from Ammonius’s *Περὶ τῶν ἀπὸ Πλάτωνος μετεμνημένων ἐξ Ὁμήρου* (*scholium ad Hom. Iliad.* 9.540), a work in which Ammonius shows the decisive influence of Homer on Plato. Ammonius denies, however, that Plato ever plagiarized Homer. See Theon, *Progymnasmata* 2.62 ff., who likewise stresses the usefulness and appropriateness of relying on and imitating the great literary models of the past.

¹³⁵*Stromateis* 6.2.25-27.

¹³⁶It seems that none of the authors of a *Περὶ κλοπῆς*, mentioned by Porphyry (see *supra*), has been Clement’s informant. Neither is it certain that he relied on Aristobulus, although both Clement and Aristobulus seem to have much in common. Naturally, it is not impossible that he made some use of Aristobulus. This, however, cannot be shown conclusively.

ilarities, parallelisms, and dependences, they are frequently mere commonplace sayings, truisms, proverbs, or just the general formulations of certain universal human experiences which in the course of time have been repeated again and again by different authors in similar or identical language.¹³⁴ Only a few examples cited by Clement can justifiably be termed deliberate plagiarisms. Hence his statement that nearly all philosophical authors of Greek antiquity—or at least those with whom he happened to be acquainted—were shameless plagiarists simply borders on the absurd, especially since this statement was uttered by a man who himself is a plagiarist of the worst sort.

Where, then, did Clement derive his information concerning the many—alleged and true—instances of plagiarism among Greek philosophers and authors? It would not be amiss to presume that for the relatively short report on alleged wholesale thefts¹³⁵ he made use of a work *On Plagiarism*, or *Περὶ πολῶν*, which, however, is no longer extant and the author of which is unknown.¹³⁶ The considerably longer excursions dealing with petty thievery, or stolen *διάνοιαι καὶ λέξεις*, cannot possibly have been taken from an ancient work entitled *Περὶ κλοπῆς*, and this for the simple reason that most of the examples quoted by Clement are not plagiarisms in the accepted sense of the term but merely accidental parallelisms or perhaps eye-catching similarities which in all likelihood had been compiled by the unknown author of some lost commentary synopsis, or *florilegium*.

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***Meaning and Existence.* By Gustav Bergmann. Madison: Univ. of Wisconsin Press, 1960. Pp. xi + 274. \$6.50.**

This is a selection from the essays which Professor Bergmann has been steadily publishing during the past six years. They cover a wide field of topics, but they do so from a certain viewpoint and with a certain aim in mind. The general standpoint is that of analytic philosophy, but the particular wing is that of an analysis of the structures of ideal languages. As for the general aim of these essays, they seem to be providing a trial run for the positions which will eventually constitute the second volume in Bergmann's presentation of the philosophy of science. In his first volume, he laid out the requirements of Newtonian explanation and suggested that they could serve as a framework for analyzing the types of explanation found in the several sciences. The crucial question then facing him was whether the logic of Newtonian physical science, as properly emended, can furnish the interpretative basis for reformulating the method and limits of psychology. Most of the essays in the present collection converge in one way or another upon this topic and thus prepare the way for a more detailed statement.

Bergmann regards the problem of the nature of mind as the most important issue in philosophy, at least in that stage of a philosophy at which he is presently engaged. He represents one of the new tendencies in analytic philosophy which seeks to recover a meaning for mind and to acknowledge its ontological status as an existent. In order to settle upon an acceptable meaning, he emphasizes the relationship between mind and intentionality. This enables him to approach the nature of mind in a functional way but without converting the theory of mind into a psychologistic description of particular, measured operations. In order to determine the object of the intentional reference, we must consider the main object of analytic philosophy itself. From where Bergmann stands, the primary concern of philosophy is to study the question of analyticity or necessity. This is a way of saying that philosophy reflects upon the structure which brings objects within the scope of scientific knowledge.

On this basis, a definition is proposed for mind, a definition which will characterize mind in terms of intentionality and its logically determined object. Mind is nothing other than the capacity to think necessity.

Bergmann then defends this logical account of mind against easy empirical attempts to dismiss it. In our actual thinking, we not only can think of the necessarily true and the necessarily false but of the contingent as well. But the referential direction of mind as such is toward the analytically necessary proposition. Bergmann adds that ours is a world of subject-predicate structures but that analytic philosophy as he conceives it would be overturned by absolute time, were it shown to be existent.

This theory of mind depends upon two preliminary decisions. The first is to confine the question about mind to the particular form of how one can fit mind into a Newtonian world and thus into a scheme based on the logic of that world. And the second point is to establish an exclusive correlation between the structure of intentionality and the object of analytic work. Within this twofold limitation, it is probably not possible to move beyond the description of mind furnished by Bergmann and those employing the same approach. But no satisfactory argument is given that every philosophical study of mind must acquire its rigor by accepting these two limiting conditions. The other approaches to intentionality which pay attention to the intending subject are not accommodated within this framework, and yet they are not to be confused with a psychologistic view of mind.

Among the later essays in this book are some interesting and highly curious forays into such earlier philosophers as Ockham, Leibniz, and Malebranche. A vigorous analysis of certain themes is made, but the absence of historical bearings gives an unreal air to the whole enterprise. Bergmann also makes an incisive and frequently humorous criticism of Urmson's little book on how analytic philosophy moved beyond classical logical atomism. The conclusion is reached (somewhat in the same vein as John Wild's genealogy) that there is a common Hegelian root for American instrumentalism, continental existentialism, and Oxford analysis. Concerning the latter school, Bergmann regards Hegelian contextualism as the basic reason why the Oxford group stressed the intended use of language and the expansion of analyzed meanings. He does not take up here the refinements introduced into this branch of analytic philosophy.

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Aristotle. By John Herman Randall, Jr. New York: Columbia Univ. Press, 1960. Pp. xi + 309. \$5.00.

John Herman Randall, Woodbridge Professor of Philosophy at Columbia University and joint editor of the *Journal of Philosophy*, has given to the philosophical public an interesting and highly personal study of Aristotle. If one did not know from other sources the substances of the author's

philosophical theories, one could certainly discover them here. There is a striking unity of interpretation running throughout the whole effort. The views which control Randall's reading of Aristotle can perhaps be reduced to two; namely, his idea of philosophy and his conception of philosophical language. For the influences which have formed his understanding of the nature of philosophy one should go to Peirce, Dewey, Mead, Alexander, and Whitehead. Randall is a philosopher of process, seeing in the world an immense complex of processes which act and interact in their own distinctive ways. The philosopher must open his eyes on the world and see what is passing there; he must distinguish the operations, the functions, and the factors at work in them. In light of this, Aristotle is interpreted as a thoroughgoing philosopher of process, or a functionalist; he is sometimes referred to as an operationalist, a contextualist, and even a behaviorist. There is a common note justifying all these designations, and it is that Aristotle was perceptive of all the processes and operations in the world.

In his presidential address to the American Philosophical Association (Eastern Division) in 1956, Professor Randall proposed the formulation of an "extraordinary language" for the purpose of expressing what the philosopher of process sees in the world. Ordinary language is for the most part a noun-language, he contends; and it is unsuited for the expression of the directly experienced world of processes. A noun-language uses nouns and adjectives to tell of things, their powers and properties; such a language fails to give an account of processes, their modes and relations. For this reason a new and sophisticated language must be supplied the philosopher. Although Randall does not develop this theory explicitly in this book, one can see that such considerations to a great extent control his linguistic interpretation of Aristotle.

The author urges with conviction the relevance on two counts of the Stagirite for contemporary philosophy. Today's philosophers are engaged in analytical studies, analysis of language and analysis of physical processes. Aristotle has much to offer for both analyses, for he presents two methods, that of the *logikos* or *dialektikos* and that of the *physikos*. As *logikos* he is the analyst of language, the dialectician, the talker. He approaches philosophical problems first in formal analysis, clarifying language, removing linguistic roadblocks. Linguistic investigation uncovers problems which defy solution on the level of language itself. Here the *physikos* in Aristotle takes over; and he employs the technique of "physical" or functional analysis, and thus he can work toward a real solution of real problems. The *logikos* can formulate questions, but it is the *physikos* who truly answers them. This dual approach taken by the Philosopher can be studied with profit today.

Greatly influenced by Jaeger's theory of doctrinal development, Randall correlates the method of the *logikos* with the earlier or Platonic period and the procedure of the *physikos* with the later or Aristotelian period. According to this theory it was in his Platonic stage that Aristotle developed his formalism, whose ideal of science was Greek geometry and which culminated in the *Posterior Analytics*. The later works are more physical and functional, and show a greater interest in inquiry and investigation; they are his naturalistic writings. For Randall, Aristotle's naturalism is the most living part of his legacy to Western philosophy; it is this which marks him as a philosopher of process. Randall does not advocate the abandonment of formalism for a pure naturalism, for he sees the need of structure within process. He pleads for an intensive harmonizing of these two aspects of Aristotle's thought. The Philosopher himself began the work of co-ordination but did not carry it through to the end.

Authentic Aristotelianism means for the author a serious concern with the world which is directly experienced and a factorial (not reductive) analysis of what is immediately encountered in that world. Likewise it signifies true rationality in the language by which one expresses what is directly seen in that world. In brief, Aristotelianism approaches the ideal of philosophy which Randall envisages, a philosophy or process, a functional realism.

In urging the timeliness of Aristotelian philosophy for the contemporary scene, Randall must take account of the view that post-Darwinian evolutionary thought has proved the notion of fixed species to be wholly passé. Though he admits that Aristotle's theory of generation makes no provision for the emergence of the absolutely novel, for him his natural teleology finds its only completion in terms of modern evolutionary thought. Perhaps reacting to the neglect and disdain shown Aristotle's logic by some contemporary logicians, Professor Randall gives a sympathetic presentation of Aristotle's formal dialectic, emphasizing that it is not a mere formal system but a most useful instrument of proof and of scientific inquiry. This logic has vast and profound ontological implications, and it is adapted for use in contemporary philosophy and science.

Randall takes up the various works of Aristotle and explains the more important concepts while interspersing his account with interesting personal reflections on the text. Usually these comments are in the nature of observations on the historical and doctrinal relations between the theories of Aristotle and those of other philosophers. Reading Aristotle in the light of modern and contemporary discussion, Randall finds ample justification in the Stagirite for the rejection of philosophical positions which he personally opposes. The empiricism of Hume and Mill, the critical epistemology of Kant, the Baconian notion of science, are among the various

philosophical views which he spurns. Aristotle's functional realism moves him to disapprove of reductive analysis and such linguistic analysis as remains wholly on the level of language.

Randall's method betrays certain weaknesses especially when he ventures into the history of medieval philosophy, an area in which he claims no real competence. The frequency and facility with which he makes his generalizations arouse prudent skepticism in the reader. It is hard to see how even considerable research could justify some of his categorical pronouncements. This book, like many in the British fashion, is noticeably lacking in references and footnotes. Despite these shortcomings one can see in this work the harvest of years of cultivation of Aristotelian studies.

Randall follows Jaeger in his interpretation of Aristotle but not without departing considerably from him at times. He maintains some rather unusual views about the meaning of certain points; for instance, he classifies as "Platonic myths" the Unmoved Mover of Book Lambda of the *Metaphysics* and the Aristotelian active intellect. These are held to be instances of the use of the "likely language" of the *Timaeus*. Following Mead and Dewey, he sees in the active intellect nothing other than *logos*, by which is meant discourse, language, or communication. First matter is of only minor importance for Aristotle, and it assumes a major philosophical role only in the systems of the creation-minded medieval Platonists. Among the many commentators Randall selects Pomponazzi and Zabarella as the most faithful to the true mind of Aristotle, even taking their Averroistic tendency into account. In Aristotle's *Organon* Randall finds that true knowledge consists in *logos* or expression.

Professor Randall disclaims any pretensions to being a philologist; he rarely discusses the Greek text, and he uses English characters instead of Greek type. He has attempted to offer a philosophical version of Aristotle as seen from his personal viewpoint. Randall has not probed deeply into metaphysics, nor has he contributed anything substantial to Aristotelian scholarship. Some of his discussions are on an elementary level. This work will probably make its strongest appeal to those interested in the history of science and in the history of ideas; but any student of Aristotle, be he beginner or specialist, will find it hard to lay down.

Treatise on Separate Substances. By Saint Thomas Aquinas. Trans. with introduction and notes by Francis J. Lescoe. West Hartford, Connecticut: Saint Joseph College, 1959. Pp. x + 138. \$2.00.

On Charity (De Caritate). By Saint Thomas Aquinas. Trans. with an introduction by Lottie H. Kendzierski. Milwaukee: Marquette Univ. Press, 1960. Pp. 115. \$3.00.

Every serious student realizes the importance of Aquinas's *Treatise on Separate Substances*, which has been characterized as "an incomparably rich historical work" (Gilson) and as "one of the most important metaphysical writings of Aquinas" (Eschmann). Lescoe now provides us with an English translation of that significant work, made from a newly established Latin text, for which twelve manuscripts were used and which fortunately will also be published as a separate volume. Those manuscripts come from various European libraries (Cambridge, Toledo, Paris, Venice, Rome, Bologna, Bordeaux, and Metz. Paris, *Bibl. Nat. lat.* 14546 was selected as the basic manuscript, although a number of readings were adopted from the other MSS and, in a couple of instances, from the early incunabula of Soncinas 1488 and Antonius Pizzamanus 1490, 1498, and 1508); and the result is a Latin text which "does not pretend to be *critical* in the strict sense of the word" but nonetheless is "adequately representative of the best extant families [of MSS] of this particular treatise" (p. 14).

The present volume is an English translation of that corrected Latin text. Lescoe here presents first an "Introduction," in which he summarizes the opinions of Mandonnet, Glorieux, Callus, Grabmann, and other scholars as to when Thomas wrote the treatise. Lescoe himself finally fixes "the period 1270-1272 as a very likely date" (pp. 6-7), mainly because the condemnation of December 10, 1270, seems to have influenced the Dominican author in Chapter xiii, no. 67, and because the entire treatise seems closely related to his *Expositio super Librum de Causis*. A brief outline of what St. Thomas says concerning separate substances concludes the "Introduction" and the translation itself immediately follows. At the end of the volume one finds a list of authors cited by St. Thomas, a bibliography of authors cited in English and/or Latin edition, and a detailed index.

The English version itself seems sufficiently accurate and clear, with abundant footnotes providing precise references to the sources St. Thomas explicitly or implicitly uses. Almost always Lescoe translates *esse* by "to be." The Latin word is notoriously hard to handle in English, but "to be" hardly seems a good English counterpart when one comes upon such misleading or, at least, awkward sentences as these: "Secondly, because he

thought that 'to be' in potency, 'to be' a subject, and 'to be' a recipient would in all cases be said according to one notion" (p. 35, no. 19). Again: "For an effect proceeds from any given agent according to the mode of the 'to be' of the agent. Now the 'to be' of the First Principle in His 'to understand' and 'to will'" (pp. 63-4, no. 52). Finally: "But in immaterial substances, their 'to be' itself is their 'to live,' and their 'to live' is not other than their 'to be intelligent'" (p. 72, no. 61).

But awkward sentences such as these are rare, and all teachers and students should be grateful to Lescoe for an important and difficult task well performed.

Gratitude is also due to Dr. Lottie Kendzierski for translating Aquinas's brief but informative study on the theological virtue of charity, which was one of a series of disputed questions held between 1269 and 1272 on the virtues (the same series seem to have included *De Virtutibus in Communi*, *De Virtutibus Cardinalibus* and *De Spe*) and which was written practically contemporaneously with his *Treatise on Separate Substances* (if we accept Lescoe's dates for the latter). True enough, Kendzierski does not establish a new Latin text for *De Caritate* but is content to work from the 1949 Marietti edition. Within those conditions, though, her translation is useful and important. Its introduction provides sections on (1) the works of St. Thomas; (2) the authenticity of the *Disputed Questions*; (3) the style of the *Quaestiones Disputatae*, together with a comparison of them with the *Quaestiones Quodlibetales* and the *Summa Theologiae*; and (4) a doctrinal summary. This last is especially significant because of the detailed evidence it gives that Aquinas's treatment of charity in the *Summa Theologiae* (II II, Questions 23-27 and 44) closely parallels that of his *Quaestio Disputata de Caritate*. Thus Kendzierski offers an additional proof that Aquinas chose those topics for his *quaestiones disputatae* which could and would be incorporated into his *Summa*.

The translation follows the introduction and is itself followed by a list of books used and a helpful index.

Of what caliber is the translation? Quite accurate and clear, I would say from spot-checking it. Occasionally, though, sentences seem a bit inaccurate or awkward. Take this as an example: "It cannot even be effected by God that the upward motion of a stone, which does not proceed from an intrinsic principle, be natural to it. Now it is possible to give a stone that power by which it would naturally move upward as *from an intrinsic principle*, but that motion would not be natural to the stone unless another nature be given to it" (p. 21; italics added). The pronoun "it" occurs five times, in two of which it is an initial expletive. Expletives are almost forced upon a translator by such frequent Latin expressions as *respondeo dicendum quod*, *sciendum est*, *possibile est*, *impossibile est*, *fieri potest ut*,

ad primum dicendum and so on (to list a few instances from the *respondeo* of the article in which we are currently interested). But too frequent use of expletives weakens the structure of English sentences. The present initial expletives could easily be replaced by some more direct and possibly more idiomatic expression such as this: "Not even God Himself could bring it about that the upward motion of a stone . . . be natural to it. Now He could give a stone that power. . . ." Moreover, what corresponds in the Latin to the italicized English phrase is *ex principio extrinseco*. Quite obviously Kendzierski's emendation is right, but she does not indicate this instance of a corrupt text as she had promised (p. 3) and as she does elsewhere (for example, see p. 30).

Again: "Therefore, that which has relation to the end must be formally in the act of the will" (pp. 36-7). In view of the Latin (*sit formale in actu voluntatis* [a. 3, Marietti ed., p. 761]) and of the context, a less misleading version apparently is: "Therefore, that which has relation to the end must be as form with respect to the act of the will." (Incidentally, matter and form with reference to virtues and virtuous acts seemingly mean nothing more than "the determinable" and "the determinant.") Even in the Latin the first portion of the next sentence is enigmatic: *Unde idem specie actus, secundum quod ordinatur ad unum finem, cadit sub forma virtutis; et secundum quod ordinatur ad alium finem, cadit sub forma vitii*. Kendzierski has: "Thus in species, the same act is considered under the form of a virtue if it is ordered to one end, or under the form of a vice if it is ordered to another end." May I suggest the following paraphrase as another interpretation? "An act which is specifically one and the same [when considered in itself] becomes now formally virtuous when referred to one goal, now formally vicious when referred to another."

Consider this as a final instance: "But in the present state of life, charity does not perfect all of the potentialities of the soul, and is not always perfectly directed to God because it must refer everything to Him by an actual intention" (p. 99). The Latin reads: *In statu autem viae caritas non implet totam potentialitatem animae, quae non semper actualiter movetur in Deum, omnia in ipsum actuali intentione referens* (a. 12, Marietti ed., p. 787). The pronoun *quae* apparently refers to *anima* and, accordingly, the following is perhaps a better translation: "But in this present state of life charity does not exhaust the entire potentiality of the soul, which is not always actually moved towards God by constantly referring everything to Him through an actual intention."

But fortunately such lapses seem comparatively rare, and Dr. Kendzierski, too, has succeeded in her translating project.

***Anaximander and the Origins of Greek Cosmology.* By Charles H. Kahn.
New York: Columbia Univ. Press. Pp. 220. \$6.50.**

This new book on Anaximander is a very fine essay. It represents an enormous amount of painstaking work on the part of the author during a period of ten years (so says the preface). The fruits of this research are to be found not only in the text. They are also incorporated in numerous excellent footnotes, many of which share with the reader interesting insights and valuable bits of information, together with pertinent sources; much is also incorporated in the indices, of which there are three.

The first of the indices is the index of subjects; this is followed by the index of names and citations; and finally there is an index of Greek terms. Though the three indices, taken together in tandem, take up only six pages, they include all of the materials that are important and should prove to be both adequate and very useful.

The preface tells the story of the beginnings of the work and presents nicely the points which make it different from what has been given us by previous scholarly investigations.

Close study of the poem of Parmenides served as the original spring-board. The author was impressed by the fact that a number of very fundamental cosmological concepts are accepted as well known by Parmenides and that the general world-view which serves as background to the poem is not the creation of Parmenides himself.

One of the differences that distinguishes the present inquiry from the traditional scheme is that the originality of Pythagoras is considered to be a figment, or an exaggeration, of the Hellenistic imagination. Some dozen pages, Appendix I, deal very thoroughly and in great detail with the use of the term *kosmos* in early Greek philosophy. The consequence of this appendix is that it appears quite plausible that the account of Diogenes Laertius that it was Pythagoras who first used the term *kosmos* of the universe is unhistorical.

A second departure from the traditional view consists in the portrayal of Anaximander as the intellectual giant of early Miletus, in whose glory both Thales and Anaximenes are dwarfed by comparison. To Anaximander is traced that which is most characteristic of Greek cosmology. This disagrees with the opinion of W. K. Guthrie. Thereby Anaximander is also separated from the company of Hesiod by a radical contrast in ideas about the physical universe; and this disagrees with the Cornford opinion.

Another interesting contribution or suggestion is that the occurrence of what may be called a sort of common early cosmological doctrine among

the ancient Greeks is testimony to the great influence of Anaximander. This line of thought would tend to place the undated Orphic poems at a time subsequent to the appearance of Anaximander and not at some period before the Ionian beginnings of philosophical speculation.

The thought of the book centers, as one would expect, about the fragment preserved by Simplicios. A very careful, cautious, balanced use of the doxographical materials is relied on for a sort of reconstruction of the lost original from Theophrastus. The principal authors consulted are Aetius, Aristotle, Diogenes Laertius, Hippolytus, Eusebius (Pseudo-Plutarch), with due consideration being given to Cicero and in some instances to St. Augustine.

The first part of the investigation deals with the documentary evidence; it closes with the texts and a very interesting commentary. A translation of all the texts would have been very welcome. While it is quite true that the commentary supplants the omission of translations, still one is curious as to how this or that phrase in a text would have been presented in a straight translation.

The second section deals with the cosmology of Anaximander. There are three parts, the third part dealing explicitly with the famous fragment from Simplicios. As to the other two parts of this section, it is very difficult to be choosy. The first is on the Milesian theory of the natural world. Though much here is old, there is a pleasing spirit of freshness about the entire presentation. The same may be said also of the second part, which deals with the classical doctrine of elements and opposites and its origins. This part is done very well.

One of the pleasures to be garnered from a careful reading of this work is that of a peculiar feeling of "at-homeness." One gets the feeling of having penetrated into the company of an ancient community highly charged with sincere, vibrant intellectual questionings and searchings. The entire sequence of Greek cosmological thinking seems to take on the character of an organic whole. The root of this fine quality in the writing may be due to generous, intelligent acceptance of the suggestion of Tannery. He thinks that in historical studies of this kind one should pay much more attention to such points as successive authors have in common rather than to those points which separate one author from another.

The book can be enthusiastically recommended to several classes of readers. Those who love Greek philosophy and literature will be delighted. Classical scholars will find in it much that pleases, that inspires, that instructs. Those who do not read Greek will find much that is frustrating, especially in the closely reasoned argumentative sections. This is unfortunate. Even highly scholarly works should have more translations if

for no other reason than to win to Hellenistic studies ambitious and capable youngsters whose appetite for Greek must be whetted.

The book deserves a place on the shelves of any school where philosophy and associated disciplines are taught and studied.

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Philosophy of Science: The Philosophy of Science Institute Lectures.
Jamaica, N.Y.: St. John's Univ. Press, 1960. Pp. 164.

The Scientific Methodology of Theodoric of Freiberg: A Case Study of the Relationship between Science and Philosophy. By William A. Wallace, O.P. Fribourg, Switzerland: The Univ. Press, 1959 Pp. xviii + 395. DM 22.

The problem central to both works being reviewed is the relationship between the positive sciences and the general philosophy (or science) of nature, essentially a modernized Aristotelian physics. In the first of the lectures given at the St. John's University Institute, "Towards a Systematic Philosophy of Science," William Carlo sets the general tone with the claim that philosophy explains to science its own nature; that is, that it deals with proximate rather than ultimate causes. In criticizing the "philosophical claims of scientific theories" he manifests a broad knowledge of science, which falters only in the facile identification of psychoanalytic and Scholastic concepts. For example, "The *super-ego* is the end and purpose of an intellectual or spiritual soul attempting to find its moral and religious perfection" (p. 44).

Father Kane, O.P., treats "Reasons for the Facts of Organic Life." He concludes that the order of the parts of biology (as of the other main branches of science) is substantially that given by Aristotle and that all modern problems and theories can be given an orderly consideration only in this framework.

Vincent Smith studies the constitution of matter by fitting this problem into just such a framework. The general science of nature yields two conclusions which no particular science can falsify: the distinction between substantial and accidental change, and the matter-form composition. These conclusions are the basis for interpreting scientific data on the constitution of matter. Any sign of structure is an indication of form, the ultimate cause of the organization of matter; while any significant duality is interpreted as an adumbration of hylomorphism. Father Wolter, O.F.M., treats essentially the same problem but argues from quite a different basis. Fundamental systems coupled by electromagnetic or nuclear forces can generally be considered substantial units, while those bound by gravitational

or inertial forces are aggregates. The elements of a substantial unit can possess properties and, in principle, activities distinct from the substance as such in much the same way that a body, if informed by a *forma corporitatis*, could have limited functions apart from the soul.

Rudolph Allers presents the "unconscious" as a hypothesis which modern knowledge demands and which previous philosophers, especially Platonists, had anticipated to some extent. Particular theories of the unconscious, such as Freud's and Jung's, do not carry the same credentials of credibility.

Theodoric of Freiberg (+ c.1310), an important pioneer in the science of optics, absorbed the Aristotelian tradition and anticipated, to a surprising degree, the methods of later-day scientists. This aspect of his work, which allows Father Wallace to use him as a "case-study," is not pursued at the expense of historical or textual integrity. Working from primary sources, Father Wallace has made a careful study of the optical tradition which preceded the German Dominican as well as the subsequent development of optics through Newton, has outlined Theodoric's basic philosophical positions (a non-Thomistic Aristotelian, influenced by Averroes and tinged by Neo-Platonism), and rounded out his work by supplying critical texts and translations of important opuscula. The result is a significant contribution to the study of medieval science. Here we shall consider only one aspect of this study, Theodoric's methodology.

The goal of Theodoric's studies was the Aristotelian one of certain causal knowledge derived by deduction from certain principles. In the realm of nature—as distinct from metaphysics—such principles are few. In treating qualities, for example, the only conclusions which Theodoric could really demonstrate were some general statements concerning contraries. For more particular conclusions he supplemented this deductive process with dialectical (that is, plausible) reasoning and the *modus tollens* refutation. Alternative hypotheses were disproved by showing that they led to false conclusions, while the verified conclusions drawn from the principles on which his dialectical argument was based were interpreted as a "sign" of the validity of these principles. In his greatest achievement, his explanation of the rainbow, he supplemented this philosophical methodology by experimentation. He used prisms, flasks, and crude models of raindrops to show the process of refraction, internal reflection, and dispersion which produce the primary bow as well as the extra internal reflections necessary to account for the reversed secondary bow. He concluded with a suggestive, albeit inaccurate, geometrical explanation. Though Descartes, in re-solving the same problem, ostensibly broke with this type of physical reasoning and relied on intuition and deduction, Newton returned to a methodology very similar to Theodoric's in his own definitive treatment of light. The implication of this study, Wallace concludes, is that an adequate theory of

science must explain not only the tentative provisional nature of current theories but also the permanent contributions to science resulting from the philosophico-scientific methodologies of Theodoric, Newton, and similar workers. This requires an integrative, rather than a compartmentalized, view of the relations between science and the philosophy of nature.

In place of individual criticisms of the different views sketched here, it might be more profitable to comment on what seems to be the basic point at issue, the relation between the philosophy of nature and the positive sciences. If this relation cannot be pinpointed, perhaps, at least, it can be localized as a mean between two untenable extremes. The first extreme is to equate "scientific method" with a scheme of induction, heuristic hypotheses, mathematical deduction, and experimental verification. As Wallace has shown for medieval science and Polanyi for modern, such positivistic systems do not explain what the scientist actually does and how he reasons. For example, in trying to determine "what is going on" in an experiment, a scientist generally employs, implicitly, the principle of causality and the realization that particular substances have characteristic activities. Such physical reasoning can be systematized in terms of principles which, in turn, admit of further conclusions not given by positive science. Accordingly, both a philosophy of nature and some sort of integrative view are in order.

The other extreme, which seems equally untenable, is the position that the philosophy of nature is a general science with physics, chemistry, and so on, as subordinate parts. If this were true, the principles on which these sciences are actually based would be derived from the general science of nature. They are not. The feeling that the science of the future must eventually return to its roost in the house of Aristotle has little to support it.

What does this limiting process leave? Two links and a suggestion. First, as Smith and Carlo have pointed out, the positive sciences treat the objects of nature under some specialized aspect. The philosophy of nature is integrative inasmuch as it treats these objects as unified wholes. Secondly, as indicated above, a methodological analysis of the procedures and reasoning actually used in setting up and interpreting experiments should reveal the principles implicitly presupposed. Finally, might it not be helpful to think of the philosophy of nature and the positive sciences in terms of complementarity rather than subalternation? There is a similarity between this relation and that obtaining between classical and quantum physics. The critical experiments on which quantum theory is based presuppose the validity of classical laws, while the experiments on which both systems are based presuppose the validity of the type of physical reasoning systematized in the philosophy of nature. Yet, in spite

of this interdependence, the complementary systems are formally distinct and each has its proper intelligibility.

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***Ethical Naturalism and the Modern World-View.* By E. M. Adams. Chapel Hill: Univ. of North Carolina Press, 1960. Pp. 229 + index. \$6.00.**

In the opening chapter, Professor Adams distinguishes between morality, ethics, and philosophy of ethics. By "morality," he means an inquiry into a practical situation and the use of moral wisdom or precepts. "Ethics," in a broad sense, refers both to a common-sense moral knowledge and to the study that investigates such phenomena as the acts of persons and institutions in terms of an ethical conceptual scheme, with the emphasis on the latter reflective procedure. "Philosophy of ethics" is a study devoted to looking primarily into the use of moral language by an ethicist. It is the latter study which occupies almost entirely the attention of contemporary writers in the field. This book also is primarily a study in a philosophy of ethics in that the author thinks this is the approach to use, but he is interested in it principally as a means of getting at the ontological significance of moral language.

The aim of the author, so understood, is highly commendable. Most contemporary authors in the area of ethics are not so much ethicists as linguistic analysts of what they regard ethical statements to be; and while such investigations have a certain semantic as well as epistemological value, they do not seem to offer much advance for ethics in the customary meaning of the term—in "ethics" as Professor Adams understands the term. Although he is principally concerned to engage contemporary writers on their own grounds—that is, in philosophy of ethics—the commendable feature of the book is that he is really interested in ethics and in many respects is singularly successful in stating what such a study of ethics ought to be.

Perhaps further comment is in order about the distinctions Professor Adams makes with respect to morality, ethics, and philosophy of ethics. The distinctions do help to clarify matters and to indicate that most current writing in the moral field is almost entirely in philosophy of ethics. Therein lies, as I have already suggested, the chief difficulty with most of the contemporary literature in moral philosophy. If moral philosophy, or ethics in the traditional sense of the term, is basically a practical science, ordered ultimately to action even though having a theoretical dimension, the present extensive concern with a linguistic analysis of ethical statements

remains on the periphery of moral knowledge. Moral philosophy, again in a traditional sense that goes back to Aristotle, is not an examination about how to talk about moral phenomena but how to know about it in order finally to act. And although I think that basically this is the position of Professor Adams as well, nevertheless I think that Stuart Hampshire, whom Adams quotes, is more to the point in saying that the "type of analysis which consists in defining, or finding synonyms for the moral terms of a particular language cannot illumine the nature of moral decisions or practical problems; it is no more than local dictionary-making, or the elimination of redundant terms, which is useful only as preliminary to the study of typical moral arguments."

I suspect that Professor Adams is much closer to the position of Hampshire than perhaps he realizes. In any event, Adams goes on to give a thorough, and often penetrating, analysis of ethical naturalism (the position that ethical sentences have cognitive meaning and truth-values but are translatable into the language of science), of emotive naturalism (the position that ethical sentences are not cognitively meaningful but are expressions of likes and dislikes), and of logical naturalism (the position that ethical statements are meaningful, though not true or false, but justifiable or not in terms of good reasons or the lack of them). Adams rejects all three variants of ethical naturalism, although he began this present work, he points out, with the confidence that some version of ethical naturalism was correct.

Consequently, he espouses "non-naturalism" in ethics, a position in opposition to all three forms of ethical naturalism described above. In response to the criticism leveled against nonnaturalism, that we cannot locate in experience what is meant by value language, Adams holds that the meaning of such language can be located in the semantic content of affective-conative experiences. Moreover, Adams argues, through the value-experience which underlies moral knowledge, we can attain a categorial feature of reality which he calls "value-requiredness," and it is just this feature of reality which is not taken into account by modern scientific thought.

The final chapter, "Metaphysical Implications," is an attempt to consider the implications of the position taken by the author in relation to the modern naturalistic world-view. Such terms as "value," "change," and "causality" are historically reviewed and analytically treated. The gist of the argument is to show why and how some teleological framework must be accepted. Free will is finally discussed (throughout the book no clear distinction is made between sense desire, emotion, and intellectual desire, will, with the consequence that free will is brought in belatedly and only in the context of a metaphysical problem). The last chapter is somewhat unsuccessful, partly because it tries to cover too much in too brief a

manner, and partly because some of the "metaphysical implications" belong properly to moral philosophy itself.

Nonetheless the book, taken as a whole, is a welcome return to treating moral knowledge primarily on its own grounds without, on the one hand, getting lost in purely semantic problems or, on the other hand, reducing moral philosophy to metaphysics. It offers a challenge to the current tendency to turn moral philosophy into a purely speculative and purely logically-oriented discipline; at the same time it is an important contribution to the traditional understanding of ethics as valid practical philosophy.

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***John Dewey: His Thought and Influence.* Ed. John Blewett, S.J.
New York: Fordham Univ. Press, 1960. Pp. xiv + 242. \$5.00.**

Constituting almost the sole contribution by American Catholics to the centennial of Dewey's birth, this volume is not to be regarded lightly. It contains eight separate essays: James Collins has an essay on the genesis of Dewey's naturalism; John Blewett, S.J., on Dewey's conception of philosophy as a way of life; Beatrice Zedler on his theory of knowledge; Sister Joseph Mary Raby, S.S.J., on his meaning of progressive education; John W. Donahue, S.J., on the problem of technology in Dewey; Thomas P. Neill on his ambivalent attitude toward history; Robert Pollock on his concept of experience within American pragmatism; and Thomas Berry, C.P., on Dewey's influence in China. There is a short chronological and bibliographical note.

Just as these essays are on diverse topics, so also do they possess diverse values. While unquestionably a new high has been reached in our objective evaluation of Dewey compared with much of the past commentary that has been directed toward him, yet one senses in some of these essays that not all is sweetness and light. The choice of topics, for example, is not balanced. The most obvious deficiency is the lack of an essay on some ethical positions of Dewey; perhaps there should have been an examination of his concept of responsibility. Neill's evaluation of Dewey's position on history is unfortunate. Were Neill to have recognized, as Luigi Sturzo has said, that historical consciousness takes shape only after there is a social consciousness, then Neill would have concerned himself with the underpinnings of Dewey's social consciousness. If one is to evaluate a thinker it must be on his terms, not your own.

Of course not all the essays are of the type of Neill's. Collins has done a fine job on Dewey's development of naturalism. One can only hope

that he later extends this treatment to include Dewey's *Experience and Nature* since this work marks the final position in the attempt to locate experience within nature. Donahue's examination of Dewey's position on technology is well done and sympathetic. He recognizes the limitations of a naturalism but suggests how these can be overcome by a higher synthesis. It is Donahue, however, that points to a gap in these essays; there is no critique of *Art As Experience*. If there is to be a balancing of perspective one cannot ignore artistic experience and its functioning within ordinary experience, at least within Dewey's framework. While my competency to judge Berry's essay on Dewey's influence within China is limited, there is one question which the author seems not to raise. It is suggested that pragmatism was not adequate to the task because it was not a satisfactory alternative to the Chinese humanism which had shaped the culture for centuries. Yet what is never asked is whether or not pragmatism functions properly only within a Christian historical context. This is more than an interesting question.

The essay that gives evidence of greatest technical competence and deepest understanding of Dewey's thought is the one by Pollock. Paraphrasing Justice Holmes's comment, one can say of Pollock's essay: "Thus, methought, Dewey would have spoken had he clearly recognized his own roots within the entire Christian tradition." The task in understanding Dewey is to see him against the entire historical framework of Christian thought; and this is what Pollock does. Perhaps, had this essay been distributed to some of the other authors before they wrote, the entire volume would have been better. The essays on the theories of knowledge and education could not stand as they now do. Pollock's analysis of process and experience suggests that Dewey may have hit upon something which opens up man to a fuller and deeper awareness of his rooting within society and history.

This is an important book. Father Blewett, the editor, is to be commended. This book should be followed by others of the same type, for if there is any challenge that American Catholic philosophers face it is that of being truly American. We must face up to the American experience. Not that experience that Catholics have undergone in becoming socialized—for we are just becoming aware of the imbalancing this has caused—but that authentic experience that arises out of the relationship of the person to the American socio-cultural structure.

An Apostle of Freedom: The Life and Teachings of Nicolas Berdyaev. By Michel Alexander Vallon. New York: Philosophical Lib., 1960. Pp. 370. \$6.00.

This doctoral dissertation is a sympathetic analysis of the life and ideas of Berdyaev. The work is divided into two parts. The first part shows the development of Berdyaev's ideas in the course of his life, the second presents these ideas in an analytical form. The story of Berdyaev's life and intellectual growth is well presented: it shows how the unattached aristocratic child grew into the adolescent radical, the radical into the messianic Marxist, the Marxist into an idealist, the idealist into a rationalistic, neo-Platonic Christian. Certain characteristics are seen to remain throughout: a feeling of alienation in the world, a love of freedom, an appreciation of mysticism.

The second part analyzes the thought of Berdyaev. It begins with his notion of the first principle, which is seen to have similarities to that of Boehme (and through him, to the neo-Platonic strain in Western "mystical" writings.) Berdyaev rejects cosmological and metaphysical interpretations: he prefers to see in the relation of God and the world a personal relation of God and the Other which is a highly personal version of the negative theology. Next comes the notion of man as a free person. The defense of the absolute value of the unique human person is rightly seen as the permanent value of Berdyaev's work. Berdyaev's religious views, though expressed in terms of feeling and suprarational intuition, seem to be much more truly a rationalism which tried to include the Trinity and the Redemption into a deductive scheme (though Berdyaev thought he was being an anti-rationalist).

This study is a valuable one, and should be found in every library. The bibliography is a great help in identifying the different translations and editions of Berdyaev's works.

Beyond Matter and Mind. Natural Sciences Synthesized into Philosophy. By Albert Bachem. New York: Vantage Press, 1960. Pp. 182. \$3.50.

The late Albert Bachem was a professor of biophysics, and this work is an attempt to unite psychology and physics. The author's philosophy is an explicitly atheistic monism, which is intended to be neither spiritualistic nor materialistic. The monism is achieved by a phenomenalist-epistemological technique: matter is an integration of experience neglecting some aspects and emphasizing others; mind is a different integration emphasizing other aspects.

The first part of the book is closer to the author's speciality. He shows

the physiological role of consciousness and centers his discussion of his matter-mind monism around Fechner's and Müller's laws. Sandwiched in this discussion is an attack on teleology. He begins by criticizing dualism. He then attempts to synthesize through relativity and quantum theory. He has a chapter on religion, which is a flat rejection. This is followed by a chapter on ethics and aesthetics, in which he replaces "happiness" by "health." There is a summary as a last chapter.

***Christian Yoga.* By J.-M. Dechanet, O.S.B. Trans. Roland Hindmarsh. New York: Harper & Bros., 1960. Pp. 196. \$3.75.**

The purpose of this book is to show that Yoga techniques can be of use in Christian asceticism. The book is divided into two parts. In the first part, the author gives an account, partly historical and partly analytical, of Hindu yoga and the great yogis. The second part tries to set out doctrinally and practically a system of yoga that can be used by a Christian.

The theoretical background of the author is a kind of Augustinianism; he himself refers to William of St. Thierry and his three-fold division of man into body, soul, and spirit, which the author puts into Jungian terms as *anima*, *animus*, and *spiritus*. He argues that the primary purpose of asceticism is to restore harmony within man, and that to this end force and violence are much less effective than gentle but firm direction. The exercises are considered to be expressions of attitudes, and the causality between them is thought to be reciprocal.

***A Concise Dictionary of Existentialism.* By Ralph B. Winn. New York: Philosophical Lib., 1960. Pp. 122. \$3.75.**

This "dictionary" consists of explanatory and elucidative passages taken from the writings of Simone de Beauvoir, Martin Heidegger, Søren Kierkegaard, Karl Jaspers, Gabriel Marcel, and Jean-Paul Sartre. For a casual reader who wants to know what existentialists have said about a given topic in their own words, this is a very convenient source. It could also be used by someone who wished to have handy quotations. For the most part, the texts are well chosen.

***The Discovery of God.* By Henri De Lubac, S.J. Trans. Alexander Dru. New York: P. J. Kenedy & Sons, 1960. Pp. 212. \$3.95.**

This is a translation of *Sur les chemins de Dieu* (1956), which was almost entirely a new work, based upon the older *De la connaissance de Dieu* (1945, 1948). The translation does not contain all of the footnote material of the French original. On the whole, it is excellent, being careful, accurate, and idiomatic; some rather difficult passages, especially in Chapter Two, are difficult already in the original.

As those who are acquainted with the French original know, the work is not a complete treatise of natural theology, nor is it written in a continuous expository style. The author insists that his intention was to supplement the formal treatises with a series of reflections—often rather

brief and loosely connected—on those problems of natural theology with which many thoughtful people today find particular difficulty.

The work deals successively with the origin of the idea of God, our affirmation of His existence, the proof of God and the sort of knowledge that it culminates in, the limitations of this knowledge, the need for a continual search for God, and the place of God in the outlook of modern man.

***Education in a Free Society*, Vol. II. "Pitcairn-Crabbe Foundation Lecture, Series 2." Pittsburgh: Univ. of Pittsburgh Press, 1960. Pp. 62. \$3.00.**

This volume contains the text of three lectures: "Quantity and Quality in Higher Education," by Henry Steele Commager; "The Liberating Arts," by Robert W. McEwen; and "What Is Education For?" by Brand Blanshard. The first lecture draws on historical background to point out the problems of the present and future: increased enrollments, lack of faculty, needed support, new intellectual frontiers. The second lecture suggests that the liberating arts can be quite different in different cultures and that their role should perhaps be reduced. The third professedly examines the ends of education. Professor Blanshard puts it thus: "the aim of a liberal education is to produce reasonable minds. . . . The end of education is reasonableness" (p. 41). Reasonableness concerns beliefs, attitudes, and actions. The habit of being reasonable in belief involves a measured skepticism, reflective thinking, the ability to reason impersonally, without passion. Reasonableness in attitude is feeling, emotion, suited and proportioned to its object. Reasonable action is responsible action. In all these points Professor Blanshard suggests that this ideal is unpopular, and he says quite explicitly that it is not new. But he says it well and forcefully, in brief compass. The essay deserves to be read widely.

***Elements of Christian Philosophy*. By Etienne Gilson. Garden City, N.Y.: Doubleday & Co., 1960. Pp. 358. \$5.50.**

This volume is intended by the publishers to be a basic or introductory text for a new series of textbooks in philosophy. As its title indicates, it is an exposition of what the author believes are the most fundamental and pervasive themes of the philosophy of St. Thomas Aquinas.

The book is divided into four parts. The first part considers the relation between revelation and the Christian teacher: what Christian truth is, how St. Thomas viewed his role as a teacher of that truth, the relation of philosophy to "the philosopher" as St. Thomas saw them, and the relation of both to "sacred doctrine." This section summarizes and puts very cogently the author's notion of Christian philosophy.

The second part deals with God. After considering our knowledge of the existence of God, the author discusses in turn the "five ways" of St. Thomas and follows this section with a chapter on metaphysical approaches to the knowledge of God. In this chapter there is a very significant treatment of "being and existence," in which the distinctively

Thomistic notion of the act of being is derived from the notion of creation. The last chapter of this section deals with the essence of God.

The third part deals with being. Here the author takes up God and the transcendentals, as divine names and as attributes of being. The section concludes with chapters on creation and causality.

The fourth part deals with man. Here we find St. Thomas's notion of the human soul, the nature of knowledge and of will, and the relation of man to society.

The extensive footnotes are at the end of the text (pp. 291-338); there are also a selective bibliography, an index of names, and a subject index.

Every student of St. Thomas—teacher and graduate student as well as beginner—will profit a great deal from this book.

***Ethics. A Critical Introduction.* By A. Campbell Garnett. New York: Ronald Press, 1960. Pp. viii + 526. \$5.50.**

This book is concerned with what the author calls "ethical criticism" rather than with particular moral questions or problems. Speaking broadly, the approach is historical, though the work is in no sense intended to be a history of ethics. The book consists of three parts. The first part is a sketch of the history of morals, stressing two notable stages: the moral ideas of primitive man and the contributions of the great religions. The second part is the critique of ethical concepts. The introductory chapter of this part deals with philosophical criticism, especially in its beginnings. Successive chapters take up egoism, the pursuit of happiness, the intuition of duty, self-realization, the definability of ethical terms, emotivism, and a summary analysis and conclusions. In this, the major section, the author uses his historical approach to its best advantage, presenting the various views according to their most effective proponents. As he goes along, he analyzes and criticizes and so gradually develops his own theory. As he himself says, the theory that finally emerges can be called a kind of natural law theory (pp. 379-80). The third part consists of readings from a wide selection of authors, under more particular, though still quite inclusive, headings: the nature of the ideal life, authority and liberty, property, war, and marriage and the family.

This is a stimulating and serious book, that demands to be taken seriously by philosophers. Even those who do not agree with the author at every point will find much to think about—perhaps they will find more than a reader who passively accepts what he reads.

***Existentialism and Indian Thought.* By K. Guru Dutt. New York: Philosophical Lib., 1960. Pp. 92. \$2.75.**

The author begins this comparison with a historical and descriptive sketch of existentialism. As precursors, Pascal, Maine de Biran, Kant, Fichte, Coleridge, Schelling receive brief treatment. Kierkegaard and Nietzsche are presented in greater detail as the sources of the movement. Jaspers (introduced through Dilthey), Heidegger, Sartre, and Marcel are treated as the outstanding representatives of contemporary existentialism.

Occasionally, in explaining these ideas, the author inserts an Indian term, to indicate where points of comparison will occur. The remainder of the book is a comparison of existentialism with Indian thought. The distrust of reason, the subjective turning inward, and the notion of authentic being are seen as points held in common. But then the author goes on to show that in his opinion there is a radical difference; only Marcel is judged to have gone deeper, and this is because he accepts the Christian myth! But not even Marcel has managed to succeed, for he maintains a dualism to the end. Indian thought, by rising to nondualism, surmounts the anguish and the care in the calm of total identity. It seems to be a characteristic of Hindu syncretism to assimilate even radically different philosophies without abandoning the original positions at all.

Francisco Romero on Problems of Philosophy. By Marjorie S. Harris.
New York: Philosophical Lib., 1960. Pp. x + 115. \$3.75.

Romero is one of the more important philosophers in Argentina and has been prominent both in writing and in university life. The present book is intended to give a general view of his thought. Romero has tried to arouse interest in philosophy in South America, for he felt that the positivism dominant there for so long had unduly restricted both the interest in philosophy and the contribution which serious study of philosophy might make to that culture.

Romero is difficult to classify; he seems close to French spiritualism, but is more realistic and experiential. He thinks that philosophy is primarily concerned with the discovery and analysis of problems rather than with the a-priori announcement of theses. He criticizes the Cartesian method for aiming too exclusively at clarity and for being too immanent. On the contrary, he believes that man, even at the lowest stage of his development, is characterized by intentionality, by an attitude he takes toward objects. This is minimal, or natural, man. But man can arise to a spiritual level, and by this Romero means a disinterested knowledge and love. Intentionality already transcends the physical level, but complete transcendence is reached only in spiritual activity. And only spiritual activity makes a man a person. Personality is reached in self-transcending knowledge, but most specially in self-transcending moral activity.

The present study of Romero is valuable because there is so little written in English about South American thought and culture.

Hegel. Highlights: An Annotated Selection. By Wanda Orynski.
New York: Philosophical Lib., 1960. Pp. xxi + 361. \$4.75.

This book is intended to serve as an introduction to the thought of Hegel and to view it in relation to the modern world. The book is essentially a digest with generous quotations. The structure of the present book follows the three major divisions: the phenomenology of mind, the science of logic, and the philosophy of history. In the first part, all major points are given in Hegel's own words, with the author supplying connections, summarizing intervening passages, and relating the ideas to

modern times. The science of logic is digested with no quotations and in a systematic way; it is the shortest of the three parts in the present volume. The third part again uses quite a bit of direct quotation, but here is also a generous amount of interpretation.

The book may make it possible for students to gain an over-all acquaintance with Hegel, where they would find a mere history of philosophy too brief, and Hegel's works in their entirety too extensive.

***Language, Truth and Poetry.* By Victor M. Hamm. "Aquinas Lecture," 1960. Milwaukee: Marquette Univ. Press, 1960. Pp. 74. \$2.50.**

The author begins by considering two extreme contemporary views about poetry: that of the positivists, who dismiss it as nonsense or at best as emotive utterance; and that of the mythologists, who would have it create objects of belief. These presentations are followed by brief but pertinent criticisms. He then proposes his own version of the realist view, that poetry is both a kind of knowledge and a creative expression of it in language. As knowledge, poetry is knowledge of the universal in the particular, in sensuous imagery, in which the imagery itself and its expression in language are partly controlling factors. As expression, it is art in the Aristotelian sense, a rational and imaginal skill in the production of the poem itself. This is an excellent discussion of the nature and function of poetry, by a man who is responsive to contemporary needs and movements of thought.

***Modern Materialism.* By Charles S. Seely. New York: Philosophical Lib., 1960. Pp. 83. \$2.50.**

This book is in favor of peace, progress, and human welfare; what connection there is between the author's fine intentions and the content of the book remains obscure. The author asserts that modern science is necessarily materialistic, that materialism is the source of all progress, and that it is the only hope of the future. The reason is that matter is prior to mind; mind depends on matter; everything changes. So we must be natural, progressive, kind to the poor and ignorant. In other words, we should practice all the Christian virtues because matter is the only reality.

***Natural Law Reader, The.* Ed. Brendan F. Brown. New York: Oceana Pubns., 1960. Pp. x + 229. \$3.50; paper, \$1.35.**

The readings included in this volume are divided into three parts. The first part is entitled "The Revival of Natural Law Jurisprudence," the second, "Scholastic Natural Law Jurisprudence," and the third, "Non-Scholastic Natural Law Jurisprudence." The selections vary in length from a short paragraph to a dozen pages and range in time from Plato to contemporaries, among whom selections from the editor's own writings are prominent.

The choice of selections in an anthology of this sort can always be questioned, and it is sufficient if the selections are representative and good.

The production, however, is technically inadequate. The editor's introductions are not easily distinguished from the selections; footnotes are very hard to identify; subheads are sometimes larger than main headings; parallel headings are of different sizes; the table of contents is not informative, and there is no subject index.

***The Nature of Science.* By David Greenwood. New York: Philosophical Lib., 1960. Pp. xiii + 95. \$3.75.**

This little volume consists of five stimulating essays, all dealing with the theory of science. In the first, title essay, the author distinguishes the formal from the factual sciences and then shows the close dependence of the latter on the former. He also discusses very carefully the logic of induction. The second essay deals with concept formation and operational definition; it shows the real but limited validity of operationism and points out that operational analysis is possible of concepts which are only implicitly operational but cannot handle the explicit concepts of operations themselves. The third essay deals with quantitative inductive procedures and points out that these procedures are very important, even though they have been somewhat neglected by logicians. The fourth essay is on causality and the counterfactual conditional; causality is here taken as universal antecedence and consequence; the author however strongly criticizes Hume's analysis, since under his suppositions the only connection we could find would be one between "impressions." In the last essay, the problem of real numbers is discussed; the question is about the proper meaning of the terms "real" and "rational" numbers.

Though the title seems to promise more than the book provides, the analyses are careful, significant, and often indicate fruitful lines for further investigation.

***Philosophy of Judaism.* By Joshua Adler. New York: Philosophical Lib., 1960. Pp. 160. \$3.00.**

This is the author's attempt to present the cultural meaning of Judaism as he understands it. In his first two chapters he speaks of the world of nature and the special characteristic of man, creativity, which he thinks pertains only to the intellectual and ethical realms. There is not much that is distinctive here, except a rejection of evolutionism on the ground of the conservation of energy. The third chapter is an explanation of the doctrine of creation. The author firmly believes that the Bible is a revealed book and that it teaches the creation of the world, in the strict sense of the term creation. He thinks that in the first moment of creation, a material principle was produced and also a kind of "Universal," which was a spiritual principle. He holds that from these two principles the rest of the world was produced and that only man has both of these principles within him. In the fourth chapter he gives his understanding of the exile in Egypt. The fifth is his justification of the negative precepts of the law about the use of food and other material things; this justification is in terms of man's need to restrain his desires. The next chapter is the

explanation of the Sabbath rest, whose purpose, he maintains, is not mere avoidance of activity but is rather orientated to bring out the idea of dedication to God. The seventh chapter explains the notion of sacrifice as a symbol, and the eighth the meaning of the term "the chosen people."

That this is a complete account of Judaism could hardly be maintained since there is no mention of prophecy; the author seems to have aimed rather at giving the universally valid essentials of the Jewish religion. Apart from his view that the Bible is revealed (a position which is barely explained and for which he adduces no evidence), he seems to take rationalistic interpretations, as is especially evident in his argument against the "Fall." In addition the book is not well organized; the style is awkward, so much so that some sentences are almost unintelligible. There is no index.

***Scientific Basis for World Civilization.* By Leo J. Baranski. Boston: Christopher Pub. House, 1960. Pp. 653. \$7.50.**

In his preface, the author tells us that he had a great deal of difficulty getting this book published, and even getting it read; now that the book has been published it seems quite likely that it will still not be widely read. There is a vast amount of erudition, a twenty-page bibliography, a very detailed index.

The basic viewpoint is that of general semantics; the notion of unifying all knowledge into one science through unitary field theory was first expressed in writing by L. L. Whyte. But the author allows free play to emotional argument. Most of his psychological and social (ethical) theory and conclusions are proposed with rhetoric and sweeping generalizations. The scientific character of these statements is constantly asserted, the unscientific nature of philosophy and religion is asserted almost as often. And, as usual in general proposals of this kind, the social scientist is to be given the most extensive powers of control that make the fearsome prophecies of Huxley and Orwell seem only half-hearted tyranny.

***The Search for Values.* By Russell Coleburt. New York: Sheed & Ward, 1960. Pp. 135. \$3.00.**

This book is written for the general reader and is intended to point out the absence of real values in much of modern life, the dislocation and disturbance which this lack has brought about. It is also intended to help the reader understand what value is and how to find it. The author is at his best in showing what the loss of values has led to and how a complete subjectivization of them is an equivalent of loss. On the other hand, his references to the difference between science and philosophy, and his attempt to answer Hume's question about the derivation of an "ought" from an "is" by asserting that we *do* experience obligation, indicate a weakness in epistemology. Yet the book is a good one to recommend to someone who wants an easily readable discussion of value and its objectivity, or to a beginning student in ethics who has no grasp of the problems which face many men today.

***Sociology of Religion.* By Georg Simmel. Trans. Curt Rosenthal. Introd. by Feliks Gross. New York: Philosophical Lib., 1960. Pp. x + 76. \$3.75.**

Simmel is one of the classical writers of sociology, and the present work (first published in 1905) is one of the earliest to consider religion as a phenomenon. Contemporary sociologists follow an altogether different method—they are concerned with factual relations—yet perhaps they also have unexpressed a-priori theories about religion. Simmel, in contrast, carries on a highly a-priori analysis of the function of religion in a society. In many ways this analysis is similar to the Kantian analysis of knowledge. It is thus a sort of philosophical sociology. Though the work is quite difficult, a study of it might well clarify the thinking of more empirically minded investigators.

The translation is good, though it bears the marks of the extremely involved style of the original.

***A Study of Hebrew Thought.* By Claude Tresmontant. Trans. Michael Francis Gibson. New York: Desclée Co., 1960. Pp. xx + 178. \$3.75.**

The author intends to set out the essential elements "of the metaphysical system implicitly present in the Bible" and from this basis "to contribute towards a definition of the requirements and essence of Christian philosophy," as well as to show the relationship of biblical thought to Greek philosophy and Gnosticism (p. xx). This is a very ambitious undertaking.

The author begins with the idea of creation. In treating this point, he shows that creation is incompatible with neo-Platonism, with pantheism, or with a Manichaeian dual first principle. Next he takes up the notion of time, which the author believes fundamental to the Hebrew conception of the created world. In treating this concept, he makes considerable use of Bergson's analyses of time. Here there are some dubious interpretations: the author tells us that with a true notion of time as becoming we cannot view reality as composed of things; he also holds that the Greek view of time either considered it an illusion or as a degradation of being. He also maintains that the biblical conception of time implies liberty. In treating of matter and the sensible, the author rightly insists that there is no contempt of sensible things in the Bible, but rather even a love of them (in relation to God, of course). He further insists that there is no dualism and draws the strange conclusion that the Hebrews could not think of matter or body because they were not dualists.

The second part is supposed to present the biblical anthropology. Again the author attacks dualism. Though he admits that there is a way of distinguishing between body and soul that does not imply dualism, he soon seems to forget his concession. He insists that "body" and "soul" are aspects that can be used indifferently to designate man. It is one thing to assert that Hebrew thought is pre-analytic, another to imply that analysis necessarily distorts reality. The author maintains that there is a distinction between the body-soul unit and "spirit," and tells us that "spirit"

always means the supernatural. It is very doubtful whether all the passages the author adduces can or should be interpreted in this way.

The third part deals with understanding. Here there is a good discussion of the biblical meaning of the term "heart"; this is not an original view of the author's but it is good to have it in an easily accessible form. In the fourth chapter of this part, the author makes explicit his opposition to all "Greek" forms of thought, which he says are opposed to biblical metaphysics and anthropology—though modern science and philosophy are not.

This book makes a brave attempt to do something very important, but it is not the final word. A better knowledge of the history of philosophy will be required in the man who accomplishes this aim.

Tolstoy. By Theodore Redpath. New York: Hillary House, 1960.
Pp. 126. \$2.00.

This study of Tolstoy deals only briefly and in passing with his life and supposes at least some acquaintance with his major novels. The first aspect considered is that of the ideas of Tolstoy: on religion as dogma-less and "pure" Christianity; on anarchy as the social and political expression of the pure religion; on science as being largely a waste of time, selfishness, or pride; on art as communication of feeling; on woman as degraded; and on virginity as the ideal of all men. Each exposition is followed by a criticism; the exposition is generally fair, though sometimes it seems to be sharpened; the criticism is acute, sometimes appreciative, even when the author disagrees. The second aspect is that of Tolstoy's art as a novelist, and this is well handled. A third chapter deals with formative forces and tries to show how Tolstoy came to his ideas on private property as wrong, on pacificism, and on anarchy. These treatments are followed by a conclusion and several bibliographies.

This is a good introduction, though the author seems to be somewhat hard on Tolstoy.

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ETERNAL TRUTHS IN THE THOUGHT OF SUAREZ AND OF DESCARTES

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Within the Cartesian *corpus* there are two texts which seem to indicate that there were some philosophers or theologians who maintained a doctrine wherein the eternal truths were independent of God. The first of these texts is in a letter of May 6, 1630, to Mersenne, wherein Descartes is apparently citing the texts of an unnamed adversary, who would seem to hold that the eternal truths are in themselves true and possible; being such, they are then known by God as true and possible. This position would seem to maintain that the eternal truths are in themselves true and possible, and their being so does not depend on their being known as such by God.

In regard to the eternal truths, I say once more that they are true and possible because God knows them to be true and possible, and not on the other hand that they are known by God as true as though they were true independently of Him.¹

In the second text Descartes takes a position in opposition to an unnamed adversary and holds that in God it is but one thing to will and to know in such wise that, given that God wills something, then He knows it; and only in this manner is a thing true. The adversary would seem to maintain that even though there were no God, nevertheless the eternal truths would be true.

. . . in God to will and to know are but one; that is to say, that because He wills something, so He knows it and thus only is such a thing true. One should therefore not say that if there were no God, nevertheless those truths would be true.²

As one may readily see, the doctrine of Descartes which lies beneath these texts rules many other Cartesian positions. One such case is that there is no being whatsoever that is true or good which is in any way independent of God.³ Likewise, that there is nothing which is simply and universally good save that which God, whose nature is

¹⁴ "... pour les vérités éternelles, ie dis derechef que *sunt tantum verae et possibiles, quia Deus illas veras aut possibiles cognoscit, non autem contra veras a Deo cognosci quasi independenter ab illo sint verae*" (To Mersenne, 5/6/1630, I. 149.21—150.2).

All citations are from the Adam and Tannery edition. Thus, the above citation from Descartes is "Letter of Descartes to Mersenne, May 6, 1630," ed. Adam and Tannery, I, 149, 1. 21 to 150, 1. 2.

²⁴ "... en Dieu ce n'est qu'un de vouloir et de connoistre; de sorte que *ex hoc ipso quod aliquid velit, ideo cognoscit, et ideo tantum res est vera*. Il ne faut donc pas dire que *si Deus non esset, nihilominus istae veritates essent verae*" (To Mersenne, 5/6/1630, I. 149.21—150.2).

³To Arnauld, 7/29/1648, V. 223.31—224.8.

⁴*Ibid.*

⁵Resp. 6ae, VII. 436.15-25.

⁶To P. Mesland, 5/2/1644, IV. 118.

⁷Resp. 6ae, VII. 431.26—432.18.

⁸Resp. 5ae, VII. 380.7-12.

⁹To P. Mesland, 5/12/1644, IV. 118; cf. Resp. 6ae, VII, 431.26—432.18.

¹⁰To Mersenne, 5/6/1630, I. 150.2-22.

¹¹*Ibid.*, 149.21—150.2. Cf. *ibid.*, 4/15/1630, I. 145.21-146.19; 5/27/1630, I. 151.1—153.3; 5/27/1638, II. 138.1-15.

¹²N. K. Smith in *Studies in Cartesian Philosophy* (London: Macmillan & Co., 1902) does not raise the question of why it is that Descartes was concerned with the eternal truths and their relation to God. Cf. esp. pp. 113-14.

¹³O. Hamelin, *Le Système de Descartes* (Paris: Alcan, 1921), esp. p. 234.

¹⁴Emile Boutroux, *Des Vérités éternelles chez Descartes* (Paris: Alcan, 1927).

¹⁵E. Bréhier, "La Création des vérités éternelles," *Revue philosophique de la France et de l'étranger* (Paris: Alcan,

1937). The article of Beatrice K. Rome, "Created Truths and Causa Sui," *Philosophy and Phenomenological Research*, XVII (1956), 66-78, simply follows hints given in the article of Bréhier.

¹⁶*Descartes selon l'ordre des raisons*, I. 24, 113 sq.

¹⁷"La Pensée religieuse de Descartes," *Etudes de philosophie médiévale*, VI (1924), esp. 294.

¹⁸*The Philosophy of Descartes*, esp. pp. 43-45, 270-75.

¹⁹*Descartes* (London: Benn, 1934), esp. pp. 52-53.

²⁰*New Studies in the Philosophy of Descartes*, esp. pp. 4, 23, 177-79.

²¹E. Gilson, *La Liberté chez Descartes et la théologie* (Paris: Alcan), esp. pp. 1-210.

²²Jean LaPorte, "La Liberté selon Descartes," *Etudes sur Descartes* (Paris: Colin, 1937), esp. pp. 101-6. In regard to this exposition of the doctrine of Descartes some difficulties arise. For example, why is it that the question of eternal truths arises at all? Why is it that there is any question of their independence from God? Why is it that Descartes even mentions the doctrine that the eternal truths would be true, even if God did not exist?

²³P. Garin, *Thèses cartésiennes et thèses thomistes* (Desclée-de Brouwer), pp. 130-38. To evaluate this position one must consult the following texts from the *Disputationes Metaphysicae* of Suarez: DM. 31. 12. 43 (Vives XXVI, 297); *ibid.*, 45 (Vives XXVI, 297); *ibid.*, 46 (Vives XXVI, 298).

All citations from Suarez are from the Vives edition (Paris, 1861). Thus DM. 31. 12. 43 (Vives XXVI, 296) signifies: *Disputationes Metaphysicae*, Disputation 31, section 12, number 43; ed. Vives, XXVI, 296.

²⁴Gilson, *La Liberté chez Descartes*, pp. 35-36.

wholly one and incomprehensible, wills to be good.⁴ Again, ruled by the above implied doctrine of Descartes, is the position that there is no truth which is absolutely necessary,⁵ even the truth that the whole is greater than any of its parts or that creatures can be made by God and then consequent to their being made are independent of God.⁶ Finally, the above doctrine of Descartes makes clear from one viewpoint why the nature of God is one to such an extent that it is impossible to distinguish in Him intellect and will, even by a distinction of reason.⁷

Why is it that Descartes has adopted these positions? Why is it that he has rooted all necessity in the divine will?⁸ Why is it that he has been so insistent in denying all distinctions between the divine intellect and will?⁹ Why has he so stressed the divine attributes of unity and incomprehensibility?¹⁰

In regard to the two previously cited texts of Descartes, together with the frequent reference of Descartes to the same doctrine,¹¹ historians of philosophy have taken different positions. Some, like N. K. Smith,¹² Hamelin,¹³ Boutroux,¹⁴ Bréhier,¹⁵ and Gueroult¹⁶ have not initiated any search for this unnamed adversary nor have they raised the question as to why Descartes even discussed the eternal truths. Other historians, like Gouhier,¹⁷ Gibson,¹⁸ Keeling,¹⁹ and N. K. Smith in a later work²⁰ adopt the solution which was proposed by Gilson in his work on *La Liberté chez Descartes et la théologie*.²¹ Others again, like LaPorte²² and Garin,²³ adopt a solution to the problem which is in opposition to that proposed by Gilson.

Since among historians of philosophy who have examined Descartes's position on the eternal truths Gilson's solution is central, his solution must be examined. In his search for the source of the texts of the unnamed adversary whom Descartes seems to be citing, Gilson concluded that the reason Descartes did not mention his adversary was either a matter of prudence or his customary manner never openly to attack an author, or else he was not considering any particular adversary. In any case, it would seem that if Descartes were considering the doctrine of a particular adversary, that adversary was not St. Thomas or any philosopher of the Schools.²⁴

Since the publication of Gilson's work in 1913, P. Garin has indicated

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that within Scholasticism a distinction must be made between the thought of St. Thomas and that of later Scholastics;²⁵ secondly, he has pointed out that it is in opposition to the Scholastic theologian, Suarez, that Descartes has established his doctrine of eternal truths.²⁶ Garin's work, however, leaves much to be desired in the interpretation of the texts which he handles;²⁷ besides, he does not explain the nature of the doctrine to which Descartes objected so frequently.²⁸

First, then, what is the source of the texts which Descartes cited, and what is the nature of the doctrine of this adversary of Descartes? Secondly, what is the nature of the doctrine of Descartes in the light of his adversary's position?

SOURCE OF THESE TEXTS

These very texts which Descartes cites are found in the *Disputationes Metaphysicae* of Suarez, a work which Descartes certainly had at hand when he was replying to the objections of Arnauld.²⁹ If, in truth, the *Disputationes* are the source of the doctrine on eternal truths which Descartes opposed, then as early as April-May of 1630 Descartes either had the *Disputationes* in his possession or else knew its doctrine so thoroughly that he could cite it almost *verbatim*.

In the thirty-first *Disputation* Suarez maintains that propositions which affirm eternal truths are not true because they are known by God; rather, because such propositions are true are they therefore known by God. Otherwise one could not explain why God necessarily

²⁵Garin, *Thèses cartésiennes*, pp. 130-38.

²⁶*Ibid.*

²⁷Cf. n. 23.

²⁸Garin, *Thèses cartésiennes*, pp. 136-38. Compare with these remarks of Garin the doctrine of Suarez as found in *DM.* 31. 12. 43 (Vives XXVI, 296).

²⁹In answering the objections of Arnauld, Descartes makes clear that the volumes of the *Disputationes Metaphysicae* of Suarez were readily available. Cf. *Resp.* 4ae, VII. 235. 5-14.

³⁰"... neque illae enuntiationes sunt verae quia cognoscuntur a Deo, sed potius ideo cognoscuntur, quia verae sunt, alioquin nulla reddi potest ratio cur Deus necessario cognosceret illas esse veras; nam si ab ipso Deo prove-

niret earum veritas, id fieret media voluntate Dei; unde non ex necessitate proveniret, sed voluntarie" (*DM.* 31. 12. 40 [Vives XXVI, 295]). Cf. *ibid.*, 8. 5. 5 (Vives XXV, 294).

³¹"... necessitas huius veritatis et prima radix et origo talis connexionis, non videtur posse referri in divinum exemplar. Nam ipsummet divinum exemplar habuit hanc necessitatem representandi hominem animal rationale, nec potuit illum alterius essentiae representare quod non aliud provenit, nisi quia non potest homo esse alterius essentiae, nam, hoc ipso quod sit alterius essentiae, iam non est homo, ergo ex objecto ipso et non ex exemplari divino provenit haec necessitas" (*DM.* 31. 12. 46 [Vives XXVI, 298]).

knows them to be true. On the other hand, should their truth come from God Himself, that could only come about through the mediation of God's will; were this the case, the truth would proceed from God not necessarily but voluntarily.

Those enunciations are not true because they are known by God, but rather they are therefore known because they are true; otherwise no reason could be proposed why God would necessarily know them to be true, for, if their truth would proceed from God Himself, that would be through the mediation of His will; hence, their truth would not proceed from necessity but willingly.³⁰

In the case of propositions as, for example, "Man is a rational animal," the necessity of this truth and the ultimate source and origin of such a connection cannot, it seems, be referred to the divine exemplar. This is so according to Suarez for the reason that the divine exemplar itself necessarily represented man as a rational animal, and it could not represent him as being any other essence. The root of such a necessary representation is that man's essence is such that it cannot be any other essence; were the representation that of another essence, it would not be the representation of man's essence. Hence, the necessity of this truth—namely, that man is a rational animal—comes not from the divine exemplar but from the object itself.

The necessity of this truth, the first root and origin of such a connection does not seem to be able to be referred to the divine exemplar, for the divine exemplar itself was under the necessity of representing man to be a rational animal, and it cannot represent him to be another kind of essence. This proceeds from no other source than that man cannot be another kind of essence, for, given that he were another kind of essence, he would not be man. Therefore, from the object itself and not from the divine exemplar proceeds this necessity.³¹

There is, thirdly, in the writings of Suarez at least one text wherein he removes from God's efficiency the truth of the object of divine knowledge. In a proposition, he says, where the copula *is* does not

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signify actuality—as, for example, in the proposition “man is an animal” or “running is a movement”—the truth of such enuntiations does not depend upon an efficient cause or even upon a potential efficient cause. This is so because, first of all, all efficiency terminates at actuality from which the above propositions abstract; secondly, if one considers propositions whose truth does not depend upon an efficient or upon a potential efficient cause, truth is found to be present equally in possible and in impossible things. Thus, truth is found not only in the proposition “If man is an animal he is sensible,” but also in such a proposition as “If a rock is an animal, it is sensible.” The proposition, therefore, “Every animal is sensible” does not depend *per se* upon any cause which can effect an animal. Whence, granted this impossible supposition that there were no such cause, nevertheless the proposition “Every animal is sensible” would still be true; so, too, the enuntiation “A chimera is a chimera” and like propositions would be true, even though *per impossibile* there were no efficient cause.

In another sense, however, propositions are true even if the extremes do not exist; propositions involving necessary and eternal truth are true in this sense, for since the copula “is” in this sense does not signify existence, it does not attribute to the

³²“At vero in alio sensu propositiones sunt verae, etiamsi extrema non existant; et in eodem (sensu) sunt necessariae ac perpetuae veritatis, quia cum copula ‘est’ in dicto sensu non significet existentiam, non attribuit extremis actualem realitatem in seipsis, et ideo ad suam veritatem non requirit existentiam seu realitatem actualem . . . haec est perpetua veritas ‘homo est animal’ vel ‘cursus est motus’. Atque hinc etiam fit et hae connexiones in hoc sensu non habent causam efficientem, quia omnis efficientia terminat ad actualem existentiam, a qua dictae propositiones in hoc sensu abstrahunt. . . . Imo, in hoc eodem sensu non solum non requirunt hae connexiones causam efficientem in actu, verum etiam neque in potentia videntur illam postulare, si formaliter ac praecise sistamus in earum veritate. Quod potest declarari ratione facta de propositione conditionali, cuius veritas

non pendet ex causa efficiente, vel potente efficere, et ideo aequae reperitur in rebus impossibilibus et possibilibus; aequae enim vera est haec conditionalis ‘si lapis est animal, est sensibilis’ ac ista ‘si homo est animal, est sensibilis’; ergo etiam haec propositio ‘omnis animal est sensibilis’ per se non pendet ex causa quae possit efficere animal. Unde si per impossibile nulla esset talis causa, nihilominus illa enuntiatio vera esset, sicut haec est vera ‘chymera est chymera’ vel similis” (DM. 31. 12. 45 [Vives XXVI, 297]).

³³To Mersenne, 5/6/1630, I. 149.21-24.

³⁴*Ibid.*, 149.28—150.2.

³⁵Jean Paulus, *Henri de Gand, Essai sur les tendances de sa métaphysique* (Paris: Vrin, 1938).

³⁶E. Gilson, *Jean Duns Scot* (Paris: Vrin, 1952).

extremes actual reality in themselves. Therefore, for their truth existence or actual reality is not required . . . "man is an animal" or "running is a movement" are eternal truths, and thus it comes about that such connections do not have an efficient cause because all efficiency terminates at actual existence from which such propositions abstract. . . . Moreover, such connections not only do not require an actual efficient cause, but they do not even seem to require a potentially efficient cause if we consider formally and precisely their truth. This is made evident if we consider a conditional proposition which does not depend on an efficient cause or upon a potentially efficient cause, and so truth is found equally in impossible and possible things. This proposition "if a rock is an animal, it is sensible" is equally true as this one "if a man is an animal, he is sensible." Therefore, this proposition "every animal is sensible" does not essentially depend upon any cause that can make an animal. Hence, on the impossible supposition that there were no such cause, nevertheless that proposition would be true, just as this one would be, "a chimera is a chimera" and the like.³²

Thus, within the *corpus* of the writings of Suarez there are texts which propound the doctrine to which Descartes took exception. In opposition to the first text cited by Descartes,³³ Suarez maintains that the eternal truths are true not because they are known by God but, being in themselves true, they are known by God with necessity. Against the second text cited by Descartes,³⁴ Suarez holds that the eternal truths would be true even though God did not exist.

Given that there is an opposition between Suarez and Descartes in regard to the doctrine of eternal truths, then, perchance one can understand why Descartes raised the problem of the eternal truths and understand, too, his reaction and position on this question.

DOCTRINE OF SUAREZ ON ETERNAL TRUTHS AND THEIR RELATION TO GOD

Historians of philosophy have recognized the influence of the Avicennian theory of being upon the philosophical positions of Henry of Ghent³⁵ and Duns Scotus.³⁶ It seems, however, that the Avicennian

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notion of being extends farther in the history of philosophy. The *Disputationes Metaphysicae* of Francis Suarez make amply evident the truth that the ghost of Avicenna is still haunting the Scholastics' lecture halls.

Consider, for example, the question which Suarez raises: "What is the essence of a creature prior to its production by God?"³⁷ As is his wont, Suarez immediately discusses the various positions which are maintained in regard to this question. First of all, Scotus maintains that prior to their creation creatures have a certain eternal being, which is a diminished being; that is to say, an objective being or a being of essence in their being of being known. This being is in creatures a result, as it were, of God's knowledge, but it is not a real being intrinsic in them; rather, this being of being known belongs to God Himself necessarily in order that He may know creatures, and hence it does not depend upon God's will or freedom.³⁸

Cajetan and others misinterpret the opinion, says Suarez,³⁹ and hence attack Scotus for maintaining that this being, which is proper to creatures prior to their creation, is a real being and is distinct from the being of God. Were this interpretation correct, the Thomists would rightly attack Scotus for holding a doctrine which was altogether false and contrary to the principles of faith. Scotus, however, does not teach that this being of essence of the creature prior to its creation is a real being. It would be erroneous to assert that God of necessity communicates to creatures any real participated being, no matter how diminished this being may be, for it is a matter of faith that all of God's operations are in accord with the determinations of His will.⁴⁰ Hence, to answer the question "What is the essence of a creature prior to its creation by God?" Suarez maintains that he and Scotus are in agreement and that, although the essences of creatures are known by God from eternity, the essences are themselves nothing and possess no true real being prior to their reception of true real being through the free efficiency of God.⁴¹

If it is true that prior to their creation the essences of creatures are nothing, then the consideration of essences as essences, in themselves

³⁷*DM.* 31. 2. 1 (Vives XXVI, 229).

³⁸*Ibid.*

³⁹*Ibid.*

⁴⁰*Ibid.*

⁴¹*Ibid.*

⁴²*Ibid.*

⁴³*Ibid.* (Vives XXVI, 230).

⁴⁴*Ibid.* (Vives XXVI, 231).

indifferent to existence whether that be actual or in the intellect, which has penetrated the theological and philosophical doctrines of Henry and Scotus by reason of Avicenna's influence, has no place in the thought of Suarez. But it may be that there is more here than meets the eye at first glance. If, in truth, Suarez agrees with Scotus, how can he say that the essences of creatures prior to their production by God are nothing? Perhaps the texts need closer reading, for the objection immediately arises: "You, Suarez,⁴² have asserted that the essences of creatures prior to their creation terminate God's knowledge; now, in order to terminate His knowledge, they need some being. They cannot simply be nothing."

It is true, Suarez admits, that the essences of creatures are the term, or the "that which," that divine knowledge eternally knows;⁴³ divine knowledge, however, in knowing the essences of creatures does not by that very fact posit them or suppose in them any real being. The sole being which true knowledge demands of its object is that it be a potential being and not at all that there be in it any real being.⁴⁴

Prior to its creation the essence of a creature is not simple nothing; it is a potential being. What is a potential being? If it is not simply nothing and if it is nothing real, then it can only be a being of reason. But a being of reason cannot be created. What, then, is the status of a creature's essence prior to its production by God?

In order to clarify the nature of a potential being, Suarez adopts as his own the triple consideration of essence. First of all, essence can be considered as actual; as such, however, the sole actuality which an essence possesses prior to its creation is the actuality which it has in its cause. Secondly, essences can be considered as having being because they are beings of reason. As such, however, essences do not have any real being; for, as in the case of fictitious beings, the sole being which they can possess is that of being in the intellect. The third consideration of essence is the consideration of a real essence as such; it is the consideration of a possible nature which can be created and is fit to become, or capable of becoming, actual. With such essences, whose consideration abstracts from existence, sciences are concerned. The objects of sciences are real possible essences which

are abstracted from existence, be this actual existence or be it the existence which essences have solely in the intellect.⁴⁵

Thus, the state of essences prior to their creation is that state in which essences are simply essences and as such are real possible essences which are within, and are objects of, divine science; as such they are not actual essences, nor are they mere beings of reason. They are somehow real being.⁴⁶

In order to clarify the meaning of real being, Suarez describes it in opposition to that which is not real being. First, real being is not a being which is fabricated by the intellect, for this is properly a being of reason and can be only in an intellect. In a second sense, real being is not a being which actually exists. The essence of a creature considered in itself and prior to its creation is a real being in contrast to that which is first opposed to real being; for, whereas a fictitious being cannot become an actual being, the possible essence of a creature is real in the sense that it is a potentially actual being. This is the meaning of real being which the essences of creatures possess eternally. Real being is also used in a second sense; in this meaning real being is said of actual being.⁴⁷

Although at first glance Suarez may seem to reject that doctrine of the being of essence as essence because he says that the essences of creatures which do not yet actually exist are nothing,⁴⁸ upon closer examination it is clear that such essences are nothing only in the sense that they possess no actual being. They are nevertheless potential or possible beings and as such are real being.⁴⁹

This very position Scotus had maintained, for prior to any production *ad extra* of things they possess a possible being.⁵⁰

In every creature there is a composition of act and potency; and wherever they are, potentiality or possibility is prior in the order of nature to act. Hence, potentiality in every created being is prior by nature to actuality in such wise that a being's potentiality or possibility is not nothing but is of some being according to some *esse*.

⁴⁵*Ibid.*, 10 (Vives XXVI, 232). Cf. *In Summam Sancti Thomae*, III. c. 4 (Vives I, 206-7).

⁴⁶*DM.* 31. 2. 10 (Vives XXVI, 232).

⁴⁷*Ibid.*

⁴⁸*Ibid.*, 1 (Vives XXVI, 229).

⁴⁹*Ibid.*, 10 (Vives XXVI, 232).

⁵⁰*In I Sent.*, 4. 43. 15 (Wadding X, 730).

⁵¹*Op. Ox.*, II. d. 1, q. 1, scholium.

⁵²*In Summam Sancti Thomae*, III. c. 4 (Vives I, 206).

⁵³*Ibid.*, 206-7.

⁵⁴*Ibid.*, c. 6 (Vives I, 216).

Since it is not the *esse existentiae*, it is according to the *esse quidditativum*.⁵¹

Not only does Suarez maintain the irrelevance of actual existence for the consideration of essence as such; but even in divine cognition the knowledge of actual existence of the essence of a creature removes such knowledge from the realm of absolutely necessary knowledge. God, according to His knowledge of vision (*scientia visionis*), sees things as existing or as future in some real temporal duration and as actually exercising their existence with all its conditions. Such knowledge of vision in regard to creatures is not absolutely necessary knowledge, for it supposes the future existence of the thing.⁵²

That divine knowledge of simple intelligence, however, (*scientia simplicis intelligentiae*) which is abstractive in that it abstracts from the actual existence of its object, is concerned solely with creatures to whose essence actual existence is not essential. Even though creatures do not actually exist, they are known by the divine knowledge of simple intelligence quidditatively (*quidditative*) according to their essence and as these are possible. This divine knowledge, whose term is possible things or essences, is a knowledge which is absolutely necessary, for the possibility of creatures is necessary.⁵³

These possible or potential real beings possess objectively within the divine knowledge of simple intelligence their own proper being of being possible; since God has such knowledge, He sees the being of possible beings with absolute necessity, and since these beings as such are not made and are not what they are by reason of the divine will, the divine will in their regard has no free act. Such possible beings are that which they are prior to the divine volition.⁵⁴

In the thought of Suarez what is the nature of the being which is called possible or potential being or objective being? It is not an actual being, nor is it that being which can exist solely within the intellect; possible or potential being is, then, that being which does not exist actually either in an intellect or in nature. Yet, although it is not actual, it is real and it is necessarily possible or potential being. What is the ultimate nature of this being?

Suarez's clearest explanation of the ultimate nature and meaning of potential or possible thing is found in his treatment of eternal truths.

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It is, indeed, this treatment of eternal truths which Descartes knew⁵⁵ and which influenced considerably his position.

First of all, let us determine the nature of the eternal truth of propositions; secondly, what is the nature of the being upon which such propositions are based? Lastly, what relation is there between such eternal and necessary beings and God?

What is the eternal truth of propositions? Propositions involving eternal truths, says Suarez, are true insofar as they are objectively in the mind of God. This is the sole manner in which these propositions are true eternally, because insofar as these are subjectively or really in God, to that extent they are not in themselves and so possess no truth proper to themselves; insofar as these propositions are eternal, it is clear that they could not exist actually in themselves. Nor could they exist actually in any other intellect save that of God. Hence, the sole eternal truth which such propositions possess is that of objective existence in the mind of God, for the only eternal and actual being is God.⁵⁶ Hence, the only being which the eternal truths can have is the being of being objective in the divine intellect. In God, then, exist eternally the eternal truths; not in him subjectively do they exist, for as such they are not in themselves;⁵⁷ such truths are in themselves and in God eternally as the beings of being objects of, and within, His intellect.

Secondly, what is the nature of this essence or being which is eternal and necessary, and is within the divine intellect with the being of being its object and in which is rooted the truth of eternal propositions? This question is in truth not different from the question which Suarez has previously raised;⁵⁸ namely, "What is the essence of a creature prior to its creation or production?" In the present instance, however, Suarez gives the clearer explanation of his position.

In the case of an eternal proposition, as, for example, "Man is a rational animal," it is not at all necessary for such a proposition to be eternally true that man's essence possesses from eternity a real and

⁵⁵*To Mersenne*, 4/15/1630, I. 145.5-12; 5/6/1630, I. 149.21-150.2; 5/27/1630, I. 151.1-153.3; 5/27/1638, II. 138.1-15; *To P. Mesland*, 5/2/1644, IV. 118.6-119.14; *To Arnauld*, 7/29/1648, V. 223.20-224.17.

⁵⁶*DM.* 31. 2. 8 (Vives XXVI, 231).

⁵⁷*Ibid.*, 1 (Vives XXVI, 229).

⁵⁸*Ibid.*

⁵⁹*Ibid.*, 8 (Vives XXVI, 231).

⁶⁰*Ibid.*

⁶¹*To Mersenne*, 5/6/1630, I. 149.24-26.

⁶²*DM.* 31. 2. 8 (Vives XXVI, 231).

⁶³*Ibid.*, 12. 44 (Vives XXVI, 296).

⁶⁴*Ibid.*, 45 (Vives XXVI, 296).

actual being; such a proposition does not signify that man possesses actual being. Rather, it simply says that there is an intrinsic connection between "man" and "rational animal," and that this connection is rooted in a potential and not in an actual being.⁵⁹

Spontaneously one objects to this reply that the knowledge which God has of the essence of man is not a knowledge that man can be a rational animal but that man's essence is necessarily a rational animal. Hence, a potential being does not suffice to explain such necessity.⁶⁰

To this Suarez replies, and in this reply brings out some of the implications of his position. It is this explanation for the nature of this necessary and potential being that evoked from Descartes the remark that, if men understood the meaning of their words, they could never say without blasphemy some of the things which they say.⁶¹

There is, says Suarez, a relation of necessity between "man" and "rational animal," but this relation is not absolutely necessary according to some real and actual being; it is only a relation of absolute necessity according to possibility.⁶²

This whole problem and this controversy, if we would reduce it to its ultimate origin, consist in the diverse meanings of the copula "is" which joins the extremes "man" and "rational animal." *Is* can be understood in two ways.

In the first sense, *is* signifies the real and actual conjunction of the extremes, so that the proposition "Man is a rational animal" means that man so exists in actual reality. In this sense of *is*, the truth of the proposition depends upon the actual existence of its extremes, for *is* so understood is involved in time and in real and actual duration. Moreover, in this sense of *is* the truth of the proposition is dependent upon an efficient cause, for upon it depends the actual existence of the extremes.⁶³

If *is* is understood in its other meaning, then the propositions whose extremes are connected by *is* are true even though the extremes do not actually exist. It is by the employment of *is* in this sense that there are propositions whose truth is eternal and necessary. If the sole use of *is* were that of actual existence, the only necessary and eternal truth would pertain to God, for He alone is eternally actual.⁶⁴

In this second meaning of *is*, since it does not signify actual exist-

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ence, it does not attribute to the extremes actual reality in themselves. Hence for the truth of propositions using *is* in this sense neither existence nor actual reality is required. *Is* in this sense is reducible to a hypothetical or conditional meaning. For example, if in the proposition "Man is a rational animal," *is* is understood as abstracted from time, the proposition simply means that man's nature is such that there cannot be a man who is not a rational animal.⁶⁵

Just as this conditional proposition "If there is a man, he is a rational animal" is eternally true, or "If man runs, he moves," so, too, is it eternally true that "man is an animal" or that "running is a movement."⁶⁶

The connection between the extremes of a proposition which employs *is* in this sense has no efficient cause, for all efficiency terminates at actual existence from which these propositions abstract.⁶⁷

The truth of these propositions is, then, ultimately rooted in essences which are considered simply in themselves and apart from actual existence; such a consideration of essences in themselves is not a consideration of essences as they are subjectively in the divine intellect; as such, they are not in themselves. Thus, essence considered simply as essence and apart from all existence, be this actual existence or existence in an intellect, is that being upon which depend propositions expressing eternal truths.

Essences so considered, says Suarez, since they are apart from all existence, not only need no actual efficient cause in order to be that which they are; they neither need a potentially efficient cause.⁶⁸

That this is true can be readily shown, for there are conditional propositions which, although impossible, are true; there are, besides, conditional possible propositions which are eternally true. An example of the former case is "If a stone is an animal, it is sensible," and of the latter, "If a man is an animal, he is sensible." In these two propositions and in the proposition "Every animal is sensible," essences so considered apart from all existence have no reference to efficiency. It is solely in the light of this consideration of essence that

⁶⁵*Ibid.*

⁶⁶*Ibid.*

⁶⁷*Ibid.* (Vives XXVI, 297).

⁶⁸*Ibid.*

⁶⁹*Ibid.*

⁷⁰*Ibid.*, 40 (Vives XXVI, 295).

⁷¹*Ibid.*

⁷²To Mersenne, 5/6/1630, I. 149.21-28.

⁷³"Rursus neque illae enuntiationes sunt verae quia cognoscuntur a Deo, sed potius cognoscuntur, quia verae sunt" (DM. 31. 12. 40 [Vives XXVI, 295]).

one can understand the meaning of the famed statement of Suarez that if *per impossibile* there were no efficient cause, nevertheless it would still be true that "every animal is sensible" or that "a chimera is a chimera." ⁶⁹

It is in essence considered as essence that the necessity of eternal truths is rooted, for those truths in which an essential predicate is said of a subject are within the divine intelligence in such wise that they cannot not be there. Thus, the truth that "animal is sensible" is a truth which is necessary simply and without any qualification or supposition. ⁷⁰

Since truths of essence prescind altogether from existence, they are not true because they have any reference to time; rather, even though God had determined not to create anything in time, still He would know such truths as true. Such truths of essences are truths which, although true of all times, in themselves abstract simply and wholly from all time. ⁷¹

These truths are truths which are rooted in essence and its consideration as essence, and as such are not concerned with essence as it happens to be in an intellect or as it happens in things and in time. It is because of this consideration of essence that Suarez can make the affirmation which Descartes thought blasphemous. ⁷² Suarez affirms that propositions which concern essences as such, apart from their existence in an intellect or apart from their actual existence in things, are true; this is so not at all because they are known by God but rather because such essences, considered simply and solely in themselves, are true. Hence it is that they are known by God. "Once more those enunciations are not true because they are known by God, but rather they are known because they are true." ⁷³

Thirdly, what relation is there between such essences and God? It has been seen that the truth, the necessity, and the eternity of such essences lie in the consideration of essence as essence and in its necessarily being simply that which it is; this consideration of essence as such is, as has been noted, apart from all efficiency, both actual and potential, for the reason that essence as such has no relation to existence, be this actual or that which essences have solely in an intellect. Now, in the light of this were one to maintain that the truth of such

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essences came from God, one would sap the necessity of the truth of essences at its very roots; for, if the truth of essences came from God, it would do so solely through the divine will. Their truth, then, would not be necessary but wholly dependent upon the divine will.

. . . enunciations . . . therefore are known because they are true; otherwise no reason could be proposed why God would necessarily know them to be true; for if their truth would proceed from God Himself, that would be through the mediation of His will; hence, their truth would not proceed necessarily but willingly.⁷⁴

The eternal truth of essences as such is not, then, dependent upon the divine will. Moreover, the ultimate root and origin of such essences is that of being that which they are within the intellect of God as objects known; such objects known possess the being of being objects or objective being. In regard to these objects known, the divine intellect in knowing them does not make their being, for they are not existent. In knowing them, the intellect of God (which is speculative; that is, that intellect which is ordered simply to know) supposes the truth of the object to be known. The object known by the eternal and speculative intellect of God is thus within the divine intellect that which it is in itself; such objects prescind from any future actual existence in things and even from its being in the divine intellect. Such objects or essences known are true of themselves.⁷⁵

The doctrine of the adversary of Descartes in regard to eternal truths is that propositions involving eternal truths are true only insofar as they are within an intellect which is eternal; they are not there as identical with God, for as such they have no truth proper to themselves; rather, they are within the divine intellect as being the beings of the objects of the intellect, for only as such are they eternally themselves.

⁷⁴" . . . enuntiationes . . . ; ideo cognoscuntur, quia verae sunt, alioquin nulla reddi posset ratio, cur Deus necessario cognosceret illas esse veras; nam si ab ipso Deo proveniret earum veritas, id fieret media voluntate Dei, inde non ex necessitate proveniret, sed voluntarie" (*ibid.*).

⁷⁵*Ibid.*

⁷⁶*Ibid.*, 46 (Vives XXVI, 297). Cf. *ibid.*, 25. 1. 26 (Vives XXV, 906).

⁷⁷" . . . respectu harum enuntiationum comparatur intellectus divinus ut mere speculativus, non ut operativus; intellectus autem speculativus supponit veritatem sui objecti, non facit; igitur, huiusmodi enuntiationes . . . habent perpetuam veritatem, non solum ut sunt in divino intellectu, sed etiam secundum se, ac praescindendo ab illo" (*DM.* 31. 12. 40 [Vives XXVI, 295]).

Secondly, the nature of the being upon which such truths depend is a being or essence which is eternal and necessary according to possibility. Such essences simply are what they are, and this apart from existence either in an intellect or in actual things. Man, for example, is necessarily an animal; and this is true whether it is known or not known or whether there actually is a man who is an animal. If man happens actually to be, he is necessarily an animal. Again, such essences, since as such they have no relation to actuality or existence, do not depend upon any actual or potential efficient cause, for an efficient cause makes a being to actually be.

Lastly, since all true knowledge supposes the reality of what is known, the relation of such essences to God's intellect is that, being eternally and necessarily what they are, these essences are within the divine intellect as objects of the divine gaze and are eternally true in themselves prescinding from the divine intellect; such essences, being necessarily what they are, are in no way dependent upon the divine will.

Against this last point two objections may be urged. First, one may insist that the existence which essences possess within the divine intellect from the side of the knowing subject suffices to explain their truth and necessity.⁷⁶

This objection is of little worth, says Suarez, for in no wise can one thus explain the necessity of such truths, as, for example, that "man is a rational animal" or that "all animals are sensible" or "running is a movement." Such truths are not truths which are made; they simply are what they are, and even the gaze of the divine speculative intellect supposes the truth of its object. Of necessity these truths are true, not only as they are within the divine intellect as identical with the knowing subject; they are true in themselves, prescinding from the divine intellect.

. . . the divine intellect is related to such enunciations as merely speculative, and not as operative; the speculative intellect, however, supposes the truth of its object and does not make it; therefore, enunciations of this kind . . . possess eternal truth, not only as they are in the divine intellect but also in themselves and prescinding from the divine intellect.⁷⁷

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One cannot say that the existence of such essences within the divine intellect from the side of the knowing subject is the ultimate origin of their necessity; rather, the exemplar within the divine intellect representing, for example, man as a rational animal, of necessity represents man as such, for such is the essence of man and it simply cannot be other. Hence, in seeking for the ultimate origin and root of the necessity and truth of essences, one must maintain that this can be found solely within the object itself and not in the divine exemplar.

. . . the necessity of this truth (the necessary connection of non-existing extremes) and the first root and origin of such a connection does not seem to be able to be referred to the divine exemplar, for the divine exemplar itself was under the necessity of representing man to be a rational animal and it cannot represent him to be another kind of essence. This proceeds from no other source than that man cannot be another kind of essence, for, given that he were another kind of essence, he would not be man. Therefore, from the object itself and not from the divine exemplar proceeds this necessity.⁷⁸

There is a second and last objection which must be answered. How is it that what stands within divine knowledge as the object known can be the root and the source of the necessity of science and of truth even for God if the object is in itself nothing, as Suarez has affirmed?⁷⁹

To grasp Suarez's solution to this objection, one must understand the

⁷⁸" . . . nihilominus necessitas huius veritatis (necessaria connexio extremorum non existentium) et prima radix et origo talis connexionis, non videtur posse referri in divinum exemplar. Nam ipsummet divinum exemplar habuit hanc necessitatem representandi hominem animal rationale, nec potuit illum alterius essentiae representare, quod non aliud provenit, nisi quia non potest homo esse alterius essentiae; nam hoc ipso quod sit res alterius essentiae, iam non est homo; ergo ex objecto ipso et non ex exemplari divino provenit haec necessitas" (*ibid.*, 46 [Vives XXVI, 298]).

⁷⁹*Ibid.* Cf. *ibid.*, 2. 1 (Vives XXVI, 229).

⁸⁰" . . . ad hoc dicendum videtur hanc connexionem nihil aliud esse quam

identitatem extremorum, quae sunt in propositionibus essentialibus et affirmativis . . . omnis enim veritas propositionis affirmativae fundatur in aliqua extremorum identitate vel unitate, quae licet a nobis concipiatur complexo modo et per modum conjunctionis praedicati cum subjecto, tamen in se nihil est praeter ipsammet rei entitatem. Identitas autem cum sit proprietas entis . . . in omni ente, seu in omni statu entis cum proportionem reperitur. Unde, sicut homo existens et animal in re idem sunt, ita homo possibilis seu qui obijci potest scientiae aut exemplari hominis, identitatem habet cum animali proportionaliter sumpto; haec ergo identitas sufficiens est ad fundandam illam necessitatem" (*ibid.*, 12. 46 [Vives XXVI, 298]).

nature of essence as such. Take, for example, the proposition which indicates the essence of man, "Man is a rational animal." Although we conceive this essence by means of a complex act, in reality *rational animal* is identical with *man*. The truth of all propositions involving essential predication is founded, or is rooted in, the self-identity of the extremes; for unity or identity is a property of being and is found in every state of being. Thus, in the state of actual being, it is one and the self-same thing for man "to be existing" and "to be animal." The essence of man or any essence—whether it be that which is nothing actual but merely that essence which is apart from all existence and is within the divine intellect as the object known, or whether it be that same essence as actual—does not affect the essence in itself. The eternal self-identity of every essence is the root of essence's necessity and truth. This is, of course, nothing actual but is simply the essence in itself.

To this it seems that one must say that this connection is nothing other than an identity of extremes which is in essential and affirmative propositions . . . for the whole truth of an affirmative proposition is founded in some identity or unity of the extremes, which although conceived by us in a complex manner and by the joining of a predicate with a subject, still in itself is nothing other than the very entity of the thing. Identity, being a property of being, is found proportionately in every being and in every state of being. Hence, just as existing man and animal are in reality the same, so possible man or that which can be the object of science or the exemplar of man possess proportionately an identity with animal. Therefore, this identity is sufficient for founding that necessity.⁸⁰

Essence, considered in its own self-identity and considered simply as such and not as actually existing or as existing in the divine intellect identical with the essence of God, is that which is the origin and the root of even divine science, for it is that to which the divine knowledge is conformed. If essence is considered simply as such, it is not caused, for it does not exist. Of essences as such God has intuition and vision, and hence essence as such is not because God knows it.

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Because essence is simply that which it is as such, so it is known by God; and in no other way can essences be truly known, unless first it is such as it is as essence.

. . . by considering the divine science, only in so far as it is a simple intelligence of creatures according to their being of essence or possible being . . . thus it seems that one can without impropriety grant that the truth of that science consists in a conformity to those objects; for according to this precise consideration it is not a cause of such objects, but merely an intuition and as it were a gazing, and therefore according to this same consideration a thing is not of such an essence because as such it is known by God; on the contrary, it is known as such because it is such an essence and in no other way could it truly be known.⁸¹

[*To be continued*]

⁸¹" . . . considerando vero divinam scientiam, solum prout est simplex intelligentia creaturam secundum esse essentiae seu possibile . . . sic videtur sine inconveniente posse concedi, etiam illius scientiae veritatem consistere in conformitate ad illa objecta; nam secundum hanc praecisam considerationem

non est causa talium objectorum, sed mere intuitio et quasi speculatio, et ideo secundum eandem considerationem non ideo res est talis essentiae, quia talis a Deo cognoscitur, sed e converso ideo talis cognoscitur, quia talis essentia est, neque aliter potuit vere cognosci" (*ibid.*, 8. 5. 5 [Vives XXV, 294]).

ANOTHER INTERPRETATION
OF *ENNEADS*, VI, 7, 32

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The relationship between faith and reason was not, as Louis-B. Geiger, O.P., has rather recently remarked, the only major speculative problem in the Middle Ages. Love, too, raised serious questions, and these with repercussions in psychology, moral philosophy and theology, literature, mysticism. For example, how many kinds of love are found on the natural level? How are these ordered to supernatural charity? Can human love be wholly unselfish and disinterested?¹

The present paper is also concerned with love and the problems it occasions. But these arise in a pagan author who antedates the Middle Ages by several centuries and are mainly centered in the exegesis of a single text. In *Enneads*, VI, 7, 32 Plotinus (d. A. D. 270) is attempting to describe The Good. This source of beauty, life, entity, intelligence is, he says, formless because beyond all forms. He is all beings inasmuch as He is their source, and yet He is none of them because they are all subsequent to Him. He is without physical extension, since His magnitude is solely a greatness of power. He is eternal and omnipresent, but nonetheless He is neither with nor without measure, and He is without shape.² The controversial lines now follow.

But if there is something desirable of which we cannot grasp the shape or form, it thereupon becomes especially desirable and lovable until the love we experience is measureless. Yes, love

here is limitless because the beloved is limitless. And, thus, love for Him is infinite and, consequently, His beauty is of another sort—beauty beyond beauty. What sort of ordinary beauty could He have Who is not a being?³

¹Louis-B. Geiger, o.p., *Le problème de l'amour chez saint Thomas d'Aquin* (Paris: J. Vrin, 1952), p. 11.

²VI, 7, 32, 5 sq.

The Greek text used for *Enneads* VI is that of E. Bréhier, *Enneads*, vol. VI (Paris: Société d'Édition "Les Belles Lettres," 1951). For *Enneads* I-III and IV-V it is that of P. Henry and H.-R. Schwyzer, *Plotini Opera*, vols. I and II (Paris: Desclée de Brouwer; Bruxelles: L'Édition Universelle, 1951 and 1959).

In my translations and paraphrases I have been helped by Bréhier's French version, which accompanies his Greek text, as well as by A. H. Armstrong's English translations of selected passages (*Plotinus* [London: George Allen and Unwin, Ltd., 1953]) and by Stephen MacKenna's English translation (*Plotinus: The Enneads* [London: Faber and Faber, 1956]). I also have had at hand the Italian translation of V. Cilito (*Plotino Enneadi* [Bari: Gius. Laterza & Figli, 1947 sq.]), as well as the German translation of Richard Harder (*Plotinus Schriften* [Hamburg: Felix Meiner Verlag, 1956]).

³VI, 7, 32, lines 24-29. The Greek text is as follows:

Καὶ μὴν οὐτοῦ ἀν ποθεινοῦ ὄντος μήτε σχῆμα μήτε μορφὴν ἔχῃς λαβεῖν, ποθεινότατον καὶ ἐρασιμώτατον ἀν εἶη, καὶ ὁ ἔρως ἀν ἄμετρος εἶη· οὐ γὰρ ὤριστα ἐνταῦθα ὁ ἔρως, ὅτι μὴδὲ τὸ ἐρώμενον, ἀλλ' ἀπειρος ἀν εἶη ὁ τοῦτου ἔρως κτλ.

Translators handle the text with some slight variations. S. MacKenna's version is somewhat elliptical: "So with shape: granted beauty, the absence of shape or form to be grasped is but enhancement of desire and love; the love will be limitless as the object is, an infinite love" (*Plotinus: The Enneads*, p. 586). E. Bréhier also omits one clause: "Or, le désirable dont on ne peut saisir ni la figure ni la forme, est le plus désirable et le plus aimable; l'amour qu'on a pour lui est sans mesure; oui, l'amour

est ici sans limites, puisque l'aimé est lui-même sans limites (*Enneads*, p. 104). Marsilius Ficinus is more complete: "Proinde res illa desiderabilis, cuius neque figuram neque formam accipere ullam potest, summopere desideranda est et amanda, immensusque illius est amor. Neque enim hic finitus est amor, quando neque amatum quidem ipsum est finitum: sed amor hujus est infinitus" (*Plotini Enneades*, ed. F. Creuzer and G. H. Moser [Paris: Ambroise Firmin Didot, 1885], p. 500). V. Cilito's is also good: "In verità, se v'è qualcosa di bramato di cui tu non puoi cogliere nè figura nè forma, si tratterà sempre di quel supremo oggetto di brama e di affascinante amore! E in questo caso l'Eros è immensurabile; tant'è vero che anche sulla terra l'Eros non conosce limiti, poichè non li conosce neppure l'oggetto amato; anzi l'Eros del Bene è infinito a tal punto che anche la sua bellezza è di tutt'altra specie . . ." (*Plotino Enneadi*, p. 365).

⁴W. Norris Clarke, s.j., "Infinity in Plotinus: a Reply," *Gregorianum* LX (1959), 91.

⁵Such a statement is easily found in a medieval theologian such as Thomas Aquinas, who finds in it the basic difference between knowledge and appetite—knowledge terminates (from one point of view) in the intellect, but appetite in the thing loved. For example, see *Summa Theologiae*, I, 16, 1 resp. (Leonine manual ed., p. 93): "Hoc autem distat inter appetitum et intellectum sive quamcumque cognitionem, quia cognitio est secundum quod cognitum est in cognoscente; appetitus autem est secundum quod appetens inclinatur in ipsam rem appetitam. Et sic terminus appetitus, quod est bonum, est in re appetibili; sed terminus cognitionis, quod est verum, est in ipso intellectu." According to my present knowledge, the statement is rarely if ever explicitly made by Plotinus.

What is meant, then, by a "limitless love"? by an "infinite love"? by a "limitless beloved"? And such questions become somewhat more urgent in the light of a recent and, in my opinion, erroneous interpretation. After having stated that VI, 7, 32 combines "in a single sweep infinity of supra-formal nonbeing, of power, and of intrinsic lovable-ness as infinite Goodness and Super-Beauty," W. Norris Clarke, S.J., then adds:

The end of the latter text alone, in fact, should be enough to clinch the case of the intrinsic infinity [of] the One: 'Love of Him is measureless . . . because that which is loved is unlimited and, thus, the love itself in infinite.' Since love always goes to its object as it is intrinsically in itself, and not to a mere extrinsic denomination, an infinite love drawn by an infinite object surely presupposes that the infinity of the beloved resides in its own inner reality as it is in itself.⁴

Reduced to its main propositions, Clarke's argumentation runs as follows:

The object loved is infinite;
But one always loves an object as it is intrinsically in itself;
Therefore, the object loved is infinite intrinsically—"in its own inner reality as it is in itself."

Obviously, the middle statement is at the heart of his argument.⁵ Change it and his conclusion too must be changed.

And change it we must, for what Plotinus himself says is quite different—"Love here is limitless *because the beloved is limitless*. And, thus, love for Him is infinite."⁶ The point he explicitly makes is that love takes its characteristics from what is loved. Since the beloved is somehow infinite, love, too, is similarly infinite. The result is that Plotinus's own line of thought differs from Clarke's in its middle statement and, thereby, in its conclusion also:

The object loved is somehow infinite;

⁴The italics are, of course, my addition. For other translations, see *supra*, note 3.

But the object loved characterizes the love;
Hence, the love in question also is somehow infinite.

In order, then, to understand what is meant by "infinite love," one must first investigate how the beloved (here, The Good) is infinite. Consequently, let us turn again to *Enneads*, VI, 7, 32 so as to discover how Plotinus predicates infinity of The Good.

THE CONTEXT

First of all, what is the context in which that chapter fits? This can best be answered by tracing the current of thought in previous chapters.

That movement of thought is initiated and then guided by a series of questions which Plotinus puts to himself.⁷ The first of these concerns how various items which are essentially linked with matter (for example, powers of sensation, horse, dog and other animals, plants, the four elements and, in general, what is inferior and without intelligence) can be found in the Intelligence, which manifestly is genuinely immaterial.⁸ This inquiry eventually leads our author to ask whence the Intelligence comes.⁹ Its source, he replies, is The Good, whom it contemplates and from whom it receives power to produce and fill itself with goods.¹⁰ In the course of his response he directs his attention also to The Good Himself. In the sensible universe the sun brings it about that things both come to be and are seen, although it transcends such things and does not itself have mere physical vision. So too There God is at once the cause of entity and the light illumining known and knower, while He Himself is above entity and intellection.¹¹ Again, He is above what He gives and, consequently, He is above life, intelligence, shape, form¹²—in a word, He is supreme and absolutely transcendent.

But, next, how does the Intelligence, together with its contents,

⁷VI, 7 is a good example of Plotinus's digressive and circuitous style of writing. See E. Bréhier, *Enneads*, "Le style de Plotin," I, xxxvi-xxxix, A. H. Armstrong, *Plotinus*, p. 15.

⁸VI, 7, chs. 1-11.

⁹*Ibid.*, ch. 12.

¹⁰*Ibid.*, chs. 13-15.

¹¹*Ibid.*, ch. 16, line 22 sq.

¹²*Ibid.*, ch. 17.

¹³*Ibid.*, ch. 18 sq.

¹⁴*Ibid.*, ch. 21 sq.

¹⁵*Ibid.*, ch. 22, line 5 sq.

¹⁶*Ibid.*, chs. 24-25.

¹⁷*Ibid.*, ch. 27.

¹⁸*Ibid.*, ch. 30.

¹⁹*Ibid.*, line 18 sq.

become good, desirable, lovable?¹³ By reason of the color, glow, warmth, light steaming down from The Good.¹⁴

Each thing has its own particular nature but it only becomes desirable when the Good colors it, giving a kind of grace to the things desired and inspiring passion in those who desire them. Then the soul, receiving into itself an outflow from Thence, is moved and dances wildly and is all stung with longing and becomes love. Before this it is not moved even towards Intelligence for all its beauty: the beauty of Intelligence is ineffective till it catches a light from the Good, and the soul by itself lies flat and is completely ineffective and is not stirred by the presence of Intelligence. But when a kind of warmth from Thence comes upon it, it gains strength and wakes and is truly winged; and though it is moved with passion for that which lies close by it, yet all the same it rises higher, to something greater which it seems to remember. And as long as there is anything higher than that which is present to it, it naturally goes on upwards, lifted by the Giver of its love. It rises above Intelligence but cannot go on above the Good, for there is nothing above.¹⁵

The series of questions which then follows provides the setting into which Chapter 32 is set. What makes The Good be *good*? Is He such because desirable, or is it the other way round?¹⁶ In general, what constitutes goodness? Is something good because it is suited to another? Because it is what the lower needs?¹⁷ Does pleasure enter into a good life?¹⁸ In answering this last, Plotinus begins the discussion of which the chapter in question is a part.

A good life does involve pleasure, he explains, provided the term is used to describe the joy resulting from living intelligently, for no manner of life is more pleasant, lovable, desirable. In the words of Plato, such a life is a mixture of truth, proportion, and beauty. Especially according to this latter does one come upon what is good.¹⁹ Since everything has beauty and light from what is prior, even an individual soul strains upward in joyous contemplation so as to see The Good, enticed as it is by the love He communicates. Under the sway of that love, it attends not to earthly beauties, transient and

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soiled as they are, but seeks only its beloved. Rising to the intelligible realm, everywhere it sees beings which are beautiful and true. Itself filled with the life of being, it becomes a genuine being and achieves true knowledge by its very presence.²⁰

CHAPTER THIRTY-TWO

But where, Plotinus continues in the opening lines of chapter thirty-two, is He who has bestowed such beauty and life and entity upon all the varied forms and beings There? [Line 5:] He is not Himself any one form (*morphē*) or power There, nor is He all of them taken together. Rather, He must be above all such powers and forms. As the source, He is formless (*to aneidon*), and yet not as lacking form but as that from which all intellectual forms have come. Whatever comes into being, necessarily becomes some thing or other and has its own proper form. But who could produce Him whom no one has ever produced? Accordingly, He is none of those beings and yet is all of them—none because they are all subsequent to Him, all because they have come from Him.

[Line 14:] Moreover, what sort of physical magnitude would He have who is all-powerful? He is infinite, and if infinite, he has no such magnitude, which is found only in what is subsequent to Him and which, as its cause, He Himself ought not have. His greatness consists in the fact that nothing is more powerful or even has equal power. For what does He have in which beings who are in no way the same as He, could equal? [Line 21:] He is eternal and omnipresent, but nonetheless He is neither with nor without measure, and He is without shape (*schema*).

The crucial lines now occur:

[Line 24:] But if there is something desirable of which one cannot grasp the shape or form, it thereupon becomes especially desirable and lovable until the love we experience is measureless. Yes, love here is limitless because the beloved is limitless. And, thus, love for Him is infinite, so that His beauty is of another sort—beauty beyond beauty. What sort of ordinary beauty could He have Who is not a being?²¹

²⁰*Ibid.*, ch. 31, line 1 sq.

²¹For the Greek text, see *supra*, note 3.

[Line 30:] Rather, since He is lovable, He produces beauty—He is its productive force, its culmination, its cause, its source and term. He makes His products beautiful, and beauty here both does and does not involve form—of itself it is not form, although that which participates it and thus becomes beautiful has a form.

MEANING OF CONTROVERSIAL LINES?

Briefly stated, our aim has been to isolate what Plotinus intends by describing the beloved as infinite in chapter thirty-two so as to understand what he means by similarly characterizing love. As a means towards that goal, we have located that chapter within its context by charting the development of thought in previous chapters. We have also paraphrased that chapter itself and have translated lines twenty-four to thirty. Now we are ready to face the question: What does our author signify there by depicting The Good and our love for Him as infinite?

When seen in context, those enigmatic lines are rather readily intelligible. Previous chapters have sung an almost constant refrain—The Good is the principle of absolutely everything. He is the source of Intelligence, of entity, of love, of beauty. He is also the source of each soul, who seeks Him through the love He Himself has bestowed. Invited and urged by this love to attain Him, a soul rises above earthly beauties and, then, above even intelligible beauties. But where is that Source? Still higher, and the description given Him in chapter thirty-two obviously is mainly negative: we are told what He is not rather than what He is. He is not any one definite form or power because He is above all such forms and powers. As their source and in His transcendency, then, He is formless. Although He can be said to be all beings inasmuch as all have come from Him, nonetheless He actually is none of them, for being comes after Him. Because of His infinite power, He rises above mere physical extension and size, and His eternity and omnipresence set Him beyond both the absence and presence of measure. He is without figure or shape. In short, because of His absolute transcendency He is infinite, and the term is the negation in Him of the definite forms, shapes, figures, being,

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properties suited only to lower levels of reality. He is not merely this or that entity but much more. But because of the love He plants in them, those beings love Him. Now love takes on the characteristics of the object loved. Therefore, their love for Him is similarly infinite. It is not aimed at this or that parcel of being but at the supreme Existent Himself. It is not tied down to this or that manner of expression. It is not restricted to this or that size but capable of indefinite growth and enrichment. It is developed only when the soul puts away the determined forms and contours of inferior entities and achieves a status of spiritual and personal indetermination to match that of the Beloved.²² He is immense; so too is love for Him. He is incomprehensible, and likewise is our love. He is transcendent; our love is transcendent. He is indescribable; so too is our love.

When predicated of love, then, infinity assumes basically the same meaning as when applied to The One. In this latter application it apparently is mainly negative—the denial in Him of the manner of being proper only to inferior existents and of its concomitant determination. It locates Him above the intelligible and sensible universes. Accordingly, such infinity seems coterminous with nonbeing (= hyper-being) and transcendency. And since love clothes itself with whatever sort of infinity the beloved wears, our love of Him is infinite, too, by transcending the restricted, definite, limited sort of love mere creatures call forth in us so that we love Him immeasurably, ineffably, endlessly.

CORROBORATION IN CHAPTER THIRTY-THREE

The last question we must face is whether or not such infinity of nonbeing also implies that The One Himself is infinite in His own unique reality. But before taking up that question, let us note that our interpretation of chapter thirty-two is directly corroborated by the lines immediately subsequent to it, where love and lovable-ness are similarly aligned with transcendence of form and being. Love grows as the soul in her knowing-processes becomes increasingly independent

²²On this point see VI, 7, 34, 1 sq.; VI, 9, 3, 1 sq.; VI, 9, 7, 8 sq.; VI, 9, 8 33 sq. For an interpretation of those texts, see L. Sweeney, s.j., "Infinity in

Plotinus," *Gregorianum*, XXXVIII (1957), p. 529 and note 40.

²³VI, 7, 33, line 10 sq.

²⁴*Ibid.*, lines 30-38.

of forms, and what is best and most desirable is that which is entirely formless. Let us briefly paraphrase that passage.²³

The soul, Plotinus there explains, desires the supremely Beautiful and yet is unable to account for its desire. Reason says, though, that He is supremely real, since what is best and most desirable is also what is entirely formless. Accordingly, if you show the soul a form, she ascends to seek the source of that form. Reason also states that whatever has a form and, even, is a form is entirely restricted. Wherefore, such an item cannot be reality in its fullest or be self-sufficient or be subsistent beauty. Rather, it is a mere composite. Such a thing must, of course, be beautiful. And yet That Which is supremely real and is beyond beauty must not be restricted. Consequently, He must not be fashioned from a form or be a form. Therefore, while beauty resides within the sphere of the Intelligence, what is Primary and First is without form.

The experience of lovers underwrites this point, for love begins only when the soul rises beyond the sense level to some genuine intellectual knowledge. But even here she should not rest but should ascend beyond intelligible forms until eventually she arrives at the Formless, which is the source of all forms.

This [the Formless] produces form when matter comes to It. Matter is necessarily farthest away from It, since it has no form derived from itself, not even of the lowest kind. So then, if it is not matter that is lovable but the being which is informed by form, and if the form in matter comes from soul and soul is more form and more lovable, and Intelligence is more form than soul and more lovable still, we must assume that the Primary Nature of beauty is without form.²⁴

As one ascends the hierarchy of existents, then, items become increasingly lovable until one comes upon Him who transcends all forms and entities and thereby is most worthy (indeed, infinitely worthy) of love because of His very transcendency. And a soul experiences greater and greater love as she increasingly puts aside definite forms until she achieves infinite love when confronted with Him who is entirely without form or entity and thereby is infinitely lovable.

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Here, as in chapter thirty-two, love is infinite because the beloved is infinite; and infinity in each case is aligned with formlessness, non-being, transcendency.

DIVINE REALITY ITSELF INFINITE?

Finally we must ask whether such an infinity of nonbeing also

²⁵For a text representative of this tradition, see Aristotle, *Physics*, III, ch. 6, 207a8sq.: "A quantity is infinite if it is such that we can always take a part outside what has already been taken. On the other hand, what has nothing outside it is complete and whole. . . . For thus we define the whole—that from which nothing is wanting. . . . [But] that from which something is absent and outside, however small that may be, is not 'all.' 'Whole' and 'complete' are either quite identical or closely akin. Nothing is complete [= perfect] which has no end, and the end is a limit' (τέλειον δ' οὐδὲν μὴ ἔχον τέλος * τὸ δὲ τέλος πέρας).

Also see J. Owens, *Doctrine of Being in the Aristotelian Metaphysics* (Toronto: Pontifical Institute of Med. Studies, 1951), p. 306, n. 19: "Perfect Being for the Greeks meant limitation and finitude. . . . For the Greeks, imperfection was implied by infinity."

²⁶See V, 1, 7, 19-26; V, 5, 6, 1-37; VI, 7, 17, 12-18; VI, 8, 9, 37 sq.

²⁷For example, see III, 9, 7, 4 sq.; V, 6, chs. 1-6; III, 8, 9, 43 sq.; VI, 7, chs. 37 and 38; V, 3, 11, 19 sq.

²⁸See VI, 9, 3, 39 sq.: "Since the nature of The One produces all things, It is none of them. It is not a thing or quality or quantity or intellect or soul; It is not in motion or at rest, in place or in time, but exists in Itself, a unique Form or, rather, It is formless, existing before all form, before motion, before rest, for these belong to being and make it multiple." See also III, 9, 7, 1 sq.

²⁹See VI, 9, 3, 49 sq.: "Even when we call The One 'the Cause,' we are not predicating any attribute of It but of ourselves, because we received something from It while It exists in Itself.

Strictly speaking, we ought not to apply any terms at all to It. . . ."

V, 5, 6, 1 sq.: "But if all things are in that which is generated from the One [that is, in the Intelligence], which of the things in it are you going to say that the One is? Since It is none of them, it can only be said to be beyond them. Now since such realities are beings and being, the One is beyond being. This phrase, 'beyond being,' does not mean that the One is some 'this' (for it makes no positive statement about It) and is not Its name, but only implies that the One is *not* a 'this' or 'that.' That expression does not at all encompass the One, for to seek to encompass Its immense nature is ridiculous." Later in the same passage: "Therefore, The One is ineffable. 'One' simply denies any multiplicity. In the beginning of our search for the First Principle, 'One' indicates that which is most simple, but finally even this 'One' is to be dropped as an adequate term for that nature which must be seen to be reached and known" (*ibid.*, line 30 sq.).

V, 5, 13, 1 sq.: Precisely because He is the absolute Good, the Supreme can contain nothing and, thus, is void of all but itself. If we predicate any attribute of Him—whether "entity" or "intelligence" or "beauty"—, we thereby deprive Him of being absolute goodness. Rather, deny everything of Him, affirm nothing of Him, and be content to say, "He exists," without testifying to attributes which He does not have. Let us attach to Him nothing which is later and lower, for He moves above all that order, is the source of all those but is actually none of them. Etc. See also VI, 9, 4, 11-16; V, 3, chs. 13-14.

³⁰Such infinity also shows up in chapter thirty-two (see VI, 7, 32, 14-21),

indicates the Good Himself to be infinite. Is it also an attribute of the divine reality itself? Theoretically at least, it need not be but perhaps might only locate God above His products without necessarily stating whether that divine nature itself was *apeiron*. If this was the case, that supreme Reality could itself involve its own brand of determination, and thus Plotinus would remain within the long-standing Greek tradition which makes determination and limit synonymous with perfection.²⁵ Or his God might transcend finitude and infinity alike. If He is above both being and form,²⁶ above intellect and life,²⁷ above rest and motion,²⁸ why could He not also be beyond both infinity and finiteness, which would be reserved as apt epithets only for His products? In this interpretation He would be truly ineffable, genuinely indescribable.²⁹

Actually, though, the Greek author seemingly intends such an infinity of nonbeing to at least imply that The One is Himself infinite. This implication becomes apparent when one contrasts his *apeiria* of nonentity with that of power. Why is The Good infinite in power? In one interpretation, because He is the source of effects which are infinite—the infinitely numerous existents deploying throughout the endless series of world-cycles. Here, apparently, infinity properly and directly characterizes those products and is not immediately and intrinsically predicated of God Himself but rather through extrinsic denomination with reference to them.³⁰

If one contrasts this latter sort of infinity with the former, then obviously the former is directly and intrinsically predicated of God Himself inasmuch as it does not involve such extrinsic denomination. When we say, "The One is infinite as transcending the intelligible and sensible universe," The One is the subject of the proposition, infinity is His direct predicate, and thus we have actually said that The One Himself is infinite.

"But," someone may object, "the statement, 'The One Himself is infinite,' can also be interpreted as, 'The One is infinite in being and reality' or 'The very reality itself of The One is infinite.' This interpretation is not necessarily what Plotinus intends at all since such infinity is the very denial of being, as one can easily see by momentarily turning to the sensible universe. Here matter, too, is *aoriston* or

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apeiron because it is without the determination arising from form and entity. Accordingly, infinity is predicated of matter directly and intrinsically and not through extrinsic denomination. Matter is the subject, infinity is its direct predicate. In this sense one can accurately say that matter itself is infinite. But the fact that matter itself can be classified as infinite does not at all mean that matter is infinite in being and reality, because infinity here is the very absence of being, the very denial of reality. Rather, 'Matter itself is infinite' simply states the fact that matter itself is below being and form. So too, 'The One Himself is infinite' simply states the fact that The One Himself is above being and form as found on lower levels. Such infinity is merely relational: it locates God with reference to His products. It is purely negative: God is *not* similar in any way to them (thereby revealing the absence of all analogy between God and His effects in the Plotinian *Weltanschauung*). It does not imply His unique reality to be infinite."

although here Plotinus uses it chiefly to establish that The One is incorporeal: He has no physical magnitude or extension because His power is infinite. For other texts, see VI, 9, 6, 1-13; II, 4, 15, 17-26. Also see L. Sweeney, s.j., "Infinity in Plotinus," pp. 713-732, especially 713-20 and 731.

Of course, if The One Himself is infinite and if His power is identical with His reality, then infinity could also be an intrinsic attribute of the divine power itself. But one should note that even such an intrinsic infinity of power can be coupled with an infinity through extrinsic denomination in reference to its infinite effects, as Thomas Aquinas makes clear. Divine power is infinite, he explains, not only as identical with God's essence but also with respect to its effects: "Sed sciendum quod quamvis potentia habeat infinitatem ex essentia, tamen ex hoc ipso quod comparatur ad ea quorum est principium, recipit quemdam modum infinitatis quem essentia non habet. Etc." (*De Potentia*, 1, 2, resp. [Marietti ed., p. 11d]). Perhaps one reason why Aquinas does not allow one to move from power to essence (that is, to argue that God's

essence is infinite because His power is infinite) is precisely this second kind of infinity. (See *In I Sent.*, d. 43, q. 1, a. 1 solutio [Mandonnet ed., p. 1003]).

Apparently Aristotle predicates infinity of the power of his First Movers solely through extrinsic denomination since the only sort of infinity he elaborates is that of quantity, which can be directly predicated only of quantitative items. See L. Sweeney, s.j., "Aristotle's Infinity of Quantity," *Revue philosophique de Louvain*, LVIII (Nov., 1960), 504-528. One also finds infinity predicated of divine power in John Damascene (see L. Sweeney, s.j., "John Damascene and Divine Infinity," *New Scholasticism*, XXXV [1961]), 76-106.

³¹For texts on matter, see L. Sweeney, s.j., "Infinity in Plotinus," pp. 522-527. Also see Cleto Carbonara, *La Filosofia di Plotino* (2nd ed.; Napoli: Libreria Scientifica Editrice, 1954), "Il Problema della Materia," pp. 17-54; Jean Trouillard, *La Procession Plotinienne* (Paris: Presses Universitaires de France), "La matière," pp. 14-20; E. Bréhier, *Philosophy of Plotinus*, chap. ix ("The Sensible World and Matter"), pp. 164-81.

What can one answer to that lengthy objection? A reply is suggested in its own final words—"His unique reality." The very fact that God is genuinely and positively real places Him at the opposite pole of the universe from matter, which is a mere negation, nonbeing, unreality. Accordingly, the parallel set up between His infinity and that of matter collapses. When matter, because of its lack of form and entity, is classified as infinite directly and not through mere extrinsic denomination, such *apeiria* cannot establish that the very reality or being of matter is infinite since it has no reality or being. Paradoxically, its only reality is unreality, nonentity, privation.³¹ The case of God is manifestly different since He is supremely real, albeit in an indescribable, unfathomable, and completely unique manner. Consequently, when one affirms that He is infinite as transcending the being and form proper to lower levels, this affirmation is made through intrinsic denomination and, accordingly, is equivalent to saying, "God Himself is infinite," which in turn implies, "His very reality is infinite," because, unlike matter, He is the supreme and primal Reality.

Perhaps the precise nature and validity of this implication will be clearer if we compare Plotinus with Thomas Aquinas. The former's theory is much less complete and consistent, metaphysically is less adequately grounded, and yet draws rather near to the Dominican's position in one important area.

Aquinas's is a universe of being, which is analogously common to God and to creatures. In it form and actuation cause determination wherever found and, accordingly, matter can be considered as infinite because of itself it is without any form or act. But, unlike Plotinus, he holds that matter and potency are genuinely real as actually existing components in material things and, thereby, also are determinants by limiting the forms and acts which they receive and which are themselves determinants by conferring perfection on their recipients. Now each creature is a being and God is Being. But each creature is a *finite* being because a composite of act(s) received and determined by potency, whereas God is *infinite* Being because an entirely subsistent Act and so without any recipient potency. Perfect *Being* because He is subsistent Actuality, God is *infinite* Being as free from the limiting determination of matter and all potency. Here infinity, although a

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negation and an absence, belongs properly and directly to the divine being itself because what is negated is within the very sphere of being: matter and potency belong, in their own way, to being as truly as do form and act, since matter and potency, too, are genuinely real in their own way. And just as their presence in an existent has actual repercussions on his very being by making it limited, so their absence in an Existent has genuine repercussions on His very being, which thereby is unlimited. And this being is Thomas's God, whose infinity thus permeates His very entity.³²

Of course Plotinus's universe is greatly different, since primacy is not given to being but to unity³³ and analogy of being between God and creatures is replaced by absolute ontic dissimilarity. Moreover, and as we have already indicated, matter is not genuinely real—it is a privation, a darkness, a mere shadow beneath form, upon which it causes no actual determination or limitation. Form consequently is the sole source of internal determination for an entity, and its absence alone entails a corresponding state of indetermination. But, oddly enough, the relationship which exists between his God and the sort of form and being found in lower levels of reality appears similar to that in the Thomistic cosmos between the divine being and matter or potency. In each case there is a freedom from determination and limitation by God's rising above the determining factors in lower existents. According to the Christian author, the divine being is without any matter or any other sort of potentiality and, automatically, is without any limiting determination. According to the pagan Greek, The Good transcends all form and being proper to His products and,

³²See *In I Sent.*, d. 43, q. 1, a. 1 solutio (Mandonnet edition, p. 1003); *Summa Theologiae*, I, 7, articles 1 and 2 in their entirety; (Leonine manual edition, p. 32 sq.); *ibid.*, III, 10, 3 ad 1, p. 87.

³³See L. Sweeney, S.J., "Basic Principles of Plotinus's Philosophy," *Gregorianum*, XLII (1961).

³⁴My current willingness to grant that infinity is an attribute of The One Himself is a change from my earlier interpretation on this point (see my two articles, "Infinity in Plotinus, especially p. 531 and pp. 731-2, and "Plotinus Revisited," *ibid.*, XL [1959], 328-9). Accordingly, I am now in

agreement on this controversial point with Clarke (see "Infinity in Plotinus: A Reply," pp. 75-98), although my reasons for concluding that The One's reality is itself implied to be infinite are somewhat different from his.

Of my two articles on Plotinus just mentioned, one should retain the general descriptions of the two kinds of infinity—in the first it is linked with nonbeing and in the second it is predicated of divine power. But one should now add by way of correction and of complement that the first sort also implies that the very reality of The Good is infinite.

thereby, is also without the limitation, determination, imperfection He would encounter if He too had such form and being. For, as we have just seen, in Plotinus's world there is a single source of determination, and this is not matter, which is unreal and nonbeing, but only form. And God's products are perfect because of the forms and being they possess. But such being is proper only to those products and would be an imperfection and limitation in God. He transcends any such form or entity and, simultaneously, rises above their brand of determination, with the result that the divine reality is itself infinite and infinitely perfect as free from all such determination and limitation.

CONCLUSIONS

Aquinas elaborated a metaphysics of being, in which both form and matter, both act and potency, are real and are genuine determinants. Plotinus's metaphysics is much different, since matter and potency are neither real nor actual determining factors. Nevertheless, form with reference to The One plays a role similar to that which matter and potency enact with respect to Aquinas's God and apparently The One, too, is genuinely infinite in His very reality.³⁴ Such an infinity can be seen implied whenever Plotinus speaks of Him as infinite because transcendent, formless, nonbeing.

If this interpretation is accurate, both sorts of infinity are contained in *Enneads* VI, 7, 32, where God is explicitly described as infinite because of His rising above the intelligible and sensible universes and, thus, is simultaneously implied to be infinite in His own unique reality. Accordingly, in order to establish that Plotinus there intends God Himself to be infinite, one need only point to his explicit statements concerning God's *apeiria* through transcendency and nonentity. There is no need to rely upon the extraneous argumentation that since one always loves an object as it is intrinsically in itself, God must be infinite intrinsically because He is the infinite object of our love.

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A NEW ECCLESIASTICAL REVIEW, "AUGUSTINIANUM," has appeared this spring. Edited by the Professors of the International Augustinian College, Rome, who are Hermits of St. Augustine, this journal will appear three times a year and deal with all branches of ecclesiastical sciences: Sacred Scripture, theology, canon law, Church history, patrology, philosophy, and so on. The articles will be written in Latin and the chief Western languages, and contributors will not be limited to the Augustinian order. Each volume will consist of about two hundred pages and will contain, beside four or so articles; book reviews, bulletins, and notes and discussions on ecclesiastical problems. The yearly subscription rate will be five dollars. Those interested in subscribing should write to: *Ephemerides "Augustinianum,"* via S. Uffizio, 25, Rome.

THE EDITORS OF "PENSAMIENTO," the well-known Spanish philosophical journal, inaugurated, in 1956, a series of biennial meetings, of the members of the Jesuit philosophical faculties in Spain. The aim of these *Conversaciones Pensamiento*, as they have been appropriately denominated, is, of course, to stimulate the philosophical thinking of the participants through a living exchange of ideas. The first of these *Conversaciones* was held at the Pontifical University of Comillas; the second, at the Faculty of Philosophy of Alcalá de Henares. At the third, held in April, 1960, in Barcelona, the original scope of the meetings was broadened inasmuch as, besides a good representation from the faculties of philosophy of the Society of Jesus in Spain, there were present, on invitation, an almost equal number of professors from other faculties, including several prominent philosophers from other countries. At this latest gathering, to which the Faculty of S. Cugat del Vallés played host, there were four sessions. Each of these began with a detailed exposition of a particular topic. Afterwards two commentators spoke, clarifying certain points and making various observations calculated to stimulate the general discussion, which then followed. The main speakers with the topics they respectively treated were as follows: Reverend Jesús Muñoz, "The Sources of Our Knowledge of the First Principles in Their Transcendent and Absolute Validity"; Reverend José Gómez Caffarena, "The Metaphysical Implications of the Human Act of Affirmation"; Reverend Franco Días de Cerio, "Foundations for a Philosophy of History"; and Reverend Luis Martínez Gómez, "Philosophical Dogmatism in Present-Day Scholasticism and the Limits of a Wholesome

(Continued on p. 322.)

THE CERTITUDE OF PROVIDENCE IN ST. THOMAS

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Unmistakable differences in St. Thomas's statements concerning the causal certitude of providence have baffled many of his commentators. In the *Sentences* there appears the somewhat disconcerting statement to the effect that events may occur not intended by providence.¹ In the *De Veritate* this is restated in even more precise terms. Here St. Thomas distinguishes between necessary and contingent causes. In the case of the former, he affirms causal certitude (*certitudo ordinis*) both with respect to general results and with respect to each particular effect. In the case of the latter he admits causal certitude with respect to general results but denies it with respect to each particular effect. Moreover, he distinguishes the causal certitude of providence from that of predestination: the salvation of the predestined is causally certain not only in general but also in each individual case. However, this causal certainty does not apply to each particular act but only to the eventual salvation of each of the elect.² In the *Contra Gentiles* St. Thomas abandons all these restrictions and affirms that the causal certitude of providence applies to all without exception or distinction,³ a position which is upheld and even further elaborated in the *Pars Prima*.⁴

Various explanations have been proposed to reconcile these divergent statements. Cajetan, presuming the change to be self-evident, would urge the junking of the *De Veritate* opinion and the acceptance of the later doctrine. But he made no effort to explain why and how the change took place.⁵ Toletus, severely criticizing Cajetan's position, would categorically deny any change in St. Thomas's teaching on the ground that the absolute and universal infallibility attributed to divine providence in the *Contra Gentiles* and *Summa Theologiae* is attributed,

not to divine providence as such, but to divine providence *joined to divine knowledge*. Thus, for Toletus, divine providence was restricted, in the *Sentences* and *De Veritate*, to the mere ordering of means and was therefore not always infallible as regards the actual attainment of the end, because, in these early works, St. Thomas was considering divine providence as such—that is, as *pura providentia*—and not as joined to divine knowledge.⁶ Sylvester of Ferrara offered a somewhat different solution. According to him the Angelic Doctor in his early works was speaking of divine providence in general (*communis ratio providentiae*); and since there are two particular modes by which divine providence ordains things to their ends—some to the actual attainment of both means and end, others to the actual possession only of the means by which things can conveniently but not infallibly attain the end—the Angelic Doctor could not very well attribute to the *communis ratio providentiae* any infallibility except the minimum infallibility common to both particular modes; that is, an infallibility which extended only to the actual possession of the means sufficient to attain the end. The unqualified assertions, therefore, in the *Contra Gentiles* and *Summa Theologiae* to the effect that whatever is ordained by divine providence will infallibly take place, must be modified, in his opinion, by the qualifying words, “according to the particular mode by which it is ordained by divine providence.” Hence, if something is ordained to the actual possession of the means only and not of the end, it will infallibly obtain possession only of the means. But if it is ordained also to the actual attainment of the end, as in the case of the predestined, then it will infallibly attain also that end.⁷

Among other things, one difficulty with the two above explanations is that they seem to be completely a-priori; they are not (nor do they claim to be) based on any relevant or at least concomitant texts in

¹In *I Sent.*, d. 40, q. 1, a. 2.

²*De Ver.*, q. 6, aa. 1, 3.

³*CG*, III, cap. 94.

⁴*ST*, I, q. 22, a. 2; a. 4, ad 2-3.

⁵Cf. Thomas de Vio Cajetanus, *In Sum. Theol.*, I, q. 22, a. 1.

⁶Cf. Franciscus Toletus, *In Sum. Theol. S. Thomae Aquinatis Enarratio*, ed. Josephus Paria (Turin: Marietti, 1869-70), I, 273.

⁷Cf. Franciscus de Sylvestris Ferrariensis, *In Cont. Gent.*, III, c. 94.

⁸Cf. C. R. Billuart, *Summa Summae S. Thomae*, ed. F. Ecalte (Paris: Vives, 1884), I, 146-49, 214-17; Emmanuel Gisquière, *Deus Dominus* (Paris: Beauchesne, 1950), II, 448; Reginald Garrigou-Lagrange, *De Deo Uno* (Paris: Desclée de Brouwer, 1938), pp. 417-31, 494-95, 504-6; Ludovicus Billot, *De Deo Uno et Trino* (ed. 7a; Rome: Gregorian Univ. Press, 1935), pp. 362-74. Gisquière, though not a commentator, discussed the above problem in his manual.

St. Thomas. Another objection against them is that they ignore the all-too-evident fact that the points of doctrine clearly taught in the *Sentences* and *De Veritate* can nowhere be found in St. Thomas's later works. On the contrary, as the present article will attempt to show, texts in these later works abound which tend to explain why the *De Veritate* distinctions between the infallibility of divine providence and that of divine predestination (or divine knowledge or divine will, for that matter) have been dropped.

But the explanation of Billuart, Gisquière, and Garrigou-Lagrange and, probably, also Billot, it seems cannot be said to lack altogether any basis in the texts.⁸ For they all attempt to explain the *Sentences* and *De Veritate* statements concerning the limited infallibility of divine providence by appealing to the celebrated distinction between *voluntas consequens* and *antecedens*, which St. Thomas appears to have made in *In I Sent.*, d. 47, q. 1, aa. 1-3; *De Ver.*, q. 23, aa. 2-3; *Summa Theol.*, I, q. 19, a. 6, ad 1; and *Supplementum*, q. 16, a. 2, ad 5 and q. 72, a. 3. In their opinion, divine providence, insofar as it presupposes *voluntas antecedens*, is infallible only with regard to the ordering of the means; but insofar as it presupposes *voluntas consequens*, it is infallible with regard to both ordering of means and attainment of end.

But even this explanation is not exempt from defects. First of all, like Toletus's and Sylvester's explanations, it altogether ignores the fact that the opinions expressed in the *Sentences* and *De Veritate* are no longer evident in St. Thomas's later works, whereas, as will be pointed out, texts in these later works seem to indicate why those early opinions have not been restated there, although there was more than enough occasion to do so. Secondly, this explanation is itself deeply involved in many uncertainties—for example, whether *voluntas antecedens* is a *voluntas proprie* or *beneplaciti* or *signi*; what it means precisely; how it is connected with the actual order; whether it is always fulfilled; and so on—so that it would seem far better to avoid this explanation altogether, especially if some other simpler and more explicitly Thomist explanation, more in accordance with the texts, could be obtained. Thirdly, even if this explanation accurately reflects the mind of St. Thomas in the *Sentences* and *De Veritate*, it

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does not follow that it also accurately reflects the mind of the Angelic Doctor in the *Contra Gentiles* and in some other later works where the notion of *voluntas antecedens* does not appear, or in the *Summa Theologiae* where the notion is given only incidental references. Besides, even in the early works, no connection was explicitly made between divine providence and *voluntas antecedens*.

All the above explanations, therefore, whatever value they may have in explaining and justifying St. Thomas's initial insights, cannot account for the absence of those initial insights in his later works—particularly in those places where he treats of exactly the same matter—or for the presence, in those later works, of new insights which, if studied together with those initial insights in their totality as well as in the order of their appearance, cannot fail to give the over-all impression that those initial insights, which have much occupied and exercised the minds and ingenuity of his commentators, have been purposely dropped to give way to a more comprehensive and synthetic notion of divine providence. The fundamental defect in the above interpretations, then, is one of method. Their proponents do not seem to have actually followed, through St. Thomas's successive works, the variations and developments in the providence tracts as well as in the other relevant and concomitant treatises. And without this method, the findings and conclusions of the present paper, it is feared, would not emerge.

In the epilogue to his recent monumental work concerning human understanding, Father Lonergan wrote a brief description of this method:

To penetrate to the mind of a medieval thinker is to go beyond his words and phrases. It is to effect an advance in depth that is proportionate to the broadening influence of historical research. It is to grasp questions as once they were grasped. It is to take the *Opera Omnia* of such a writer as St. Thomas Aquinas and to follow through successive works the variations and developments of his views. It is to study the concomitance of such variations

⁹Bernard J. F. Lonergan, *Insight: A Study of Human Understanding* (London: Longmans, Green & Co., 1957), pp. 747-48. A more detailed description by the same author may be found in "The Concept of *Verbum* in

the Writings of St. Thomas Aquinas: V. *Imago Dei*," *Theological Studies*, X (1949), 388-93.

¹⁰See *In I Sent.*, d. 39, q. 2, a. 1.

¹¹See *ibid.*, d. 40, q. 1, a. 2.

¹²See *ibid.*

and developments and to arrive at a grasp of their motives and causes. It is to discover for oneself that the intellect of Aquinas, more rapidly on some points, more slowly on others, reached a position of dynamic equilibrium without ever ceasing to drive towards fuller and more nuanced synthesis, without ever halting complacently in some finished mental edifice, as though his mind had become dull, or his brain exhausted, or his judgment had lapsed into the error of those that forget man to be potency in the realm of intelligence.⁹

It is precisely one such "concomitance," overlooked for the most part by Aquinas's commentators, that the following pages will examine and trace through his successive works to determine some of the reasons for his divergent statements on the causal certitude of providence. This concomitance is the series of parallel passages running from the *Sentences* to the *Summa Theologiae*, in the course of which St. Thomas gradually developed his notion of divine providence.

In the *Sentences*, God is likened to an architect-builder. Just as there is providence in the architect-builder insofar as he selects the means best suited to bring about the realization of his end and anticipates and removes the impediments to such a realization, so in God there is providence insofar as He furnishes things with what will conserve their order and prevent disorder. From this comparison it would seem that the function of divine providence is simply to furnish whatever promotes, and to remove whatever hinders, the attainment of the end.¹⁰ In his distinction between providence and predestination St. Thomas seems to have further restricted the implications of this comparison. From his notion of divine providence at this period, he explicitly excludes any note by which the divine "art" of governing is conceived as causally related to the execution of the *opus* itself, as well as any implication of a divine foreknowledge of the actual course and outcome of this divine ordering.¹¹ It is not surprising, therefore, to see him affirming at this period the possibility of some events occurring which are not intended by providence.¹²

In the *De Veritate* he shifts his attention to another aspect of

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providence; namely, its analogy with human prudence. The comparison with the architect-builder is conspicuously absent. Providence is no longer described as an art (*quaedam ars*) or even as including in its significance the notion of disposition; it is distinguished from both art and disposition.¹³ The significance of this change of viewpoint lies in the fact that prudence is concerned not about things to be made or produced (*factibilia*) but about acts to be performed (*operabilia*).

This shift from art to prudence is both fortunate and unfortunate. It is fortunate inasmuch as it opens up a new aspect of divine providence, which is rich in spiritual implications. However, in another sense, it is unfortunate since it tends to perpetuate the limitations imposed in the *Sentences* on the causal certitude of providence. For prudence looks to the right ordering of already existing things to the end, while art considers the successful completion of the artifact exactly as it has been planned by the artist. Hence, in the subsequent *quaestio* on predestination St. Thomas distinguishes providence from predestination by pointing out that providence looks only to the ordering of things to the end while predestination looks also to the result or outcome of the ordering.¹⁴ Consequently, he attributed a more limited certitude to providence than to predestination. On the one hand he affirmed that the certitude of providence was not a certitude of knowledge (*certitudo cognitionis*) but a certitude of

¹³See *De Ver.*, q. 5, a. 1, and ad 9.

¹⁴"Providentia, ergo, ordinem in finem respicit tantum. . . . Sed praedestinatio respicit etiam exitum vel eventum ordinis. . . . Sic ut igitur se habet providentia ad impositionem ordinis, ita se habet praedestinatio ad ordinis exitum vel eventum" (*ibid.*, q. 6, a. 1).

¹⁵See *De Ver.*, q. 6, a. 3. For the manner in which God infallibly attains the effects of predestination without destroying man's freedom, as taught by St. Thomas at this period, cf. *ibid.*, q. 22, a. 8.

¹⁶In connection with these variations and divergences, it may be noted also that the Angelic Doctor in certain passages seems to think that the universality and immediacy of divine providence cannot be established from reason alone. Sertillanges and Rousse-

lot cite two such passages. See A. D. Sertillanges, o.p., *La Philosophie de S. Thomas d'Aquin* (Paris: Montaigne, 1940), I, 232; Pierre Rousset, s.j., *L'Intellectualisme de saint Thomas* (Paris: Beauchesne, 1936), pp. 154-56. The first of these passages (*De Ver.*, q. 14, a. 9, ad 8) is clear enough. The second and much later one (*ST*, II-II, q. 1, a. 8, ad 1), however, no longer explicitly refers to the universality and immediacy of divine providence but simply to certain questions about providence which the Angelic Doctor left unspecified. It may be interesting to find out the significance, if any, of these two passages with respect to St. Thomas's evolving understanding of providence.

¹⁷See, for example, *CG*, II, cap. 24; III, cap. 64, 66, 76, 94, 100.

¹⁸See *ibid.*, II, cap. 24.

ordering (*certitudo ordinis*). It was not a certitude of knowledge, since St. Thomas's notion of providence at this time did not include divine knowledge of the outcome. It was a certitude of ordering—that is, of the ordering of cause to effect—from a twofold aspect, general and particular: particular, inasmuch as certain particular secondary causes, such as the heavenly spheres, were then thought by St. Thomas to be necessarily ordered to the particular effects and ends to which divine providence ordained them; general, inasmuch as all secondary causes, whether necessary or contingent, could not produce effects or fail in attaining their particular ends without these effects and these failures being themselves ordained to the general end of providence.

On the other hand, the Angelic Doctor considered the certitude of predestination to be a certitude both of knowledge and of ordering. It was a certitude of knowledge because predestination as such included divine knowledge of the predestined soul's attainment of salvation. It was a certitude of ordering, not because the particular secondary cause, the predestined soul, was necessarily ordered to the acts or series of acts by which it would be actually saved, but because in the actual circumstances and aids that divine election and predilection had gratuitously arranged and prepared for it, it would actually, freely, and ultimately attain the end to which it had been predestined.¹⁵ Thus, even with regard to predestination, St. Thomas denied causal certitude with respect to the acts of each predestined soul.¹⁶

In the *Contra Gentiles* the analogy with art reappears, and this quite frequently.¹⁷ The analogy with prudence, on the other hand, falls into disuse. One reason for this reversal to the analogy with art is no doubt the fact, noted down by St. Thomas himself, that things are referred to God as *factibilia* rather than as *operabilia*.¹⁸ There is nothing in God, no act or means, which needs to be ordained to His "end," since God's essence, existence, and operation are one and the same, and He is His own "end." God, therefore, is not made more perfect because of His providence, but rather His creatures participate in His goodness through His providence. Since creatures participate in His goodness also insofar as they exist, the effects of divine

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providence must include not only the operation and perfecting of creatures but also their existence.¹⁹

Aquinas's study of the causality of divine providence with regard to the existence, nature, conditions, operations, and effects of all secondary causes,²⁰ as well as his conclusion that the facts of evil, contingency, free will, chance, and secondary causes in the universe, is not incompatible with a universal and immediate divine providence²¹ but even fits in perfectly with it, provided the basis for his further conclusion that divine providence is the ultimate *per se* cause of the whole world and history of created being. The certitude of divine providence, consequently, is not only with regard to the mere ordering of some necessary causes to their immediate ends or of all causes and effects, both contingent and necessary, to the general end, but also with regard to every existence, effect, operation, and causality in the universe, either contingent or necessary, intended by secondary agents or not intended, free or not free. For divine providence controls not only the occurrence but also the mode of occurrence of each thing. Providence controls each occurrence because it controls all the possible influences and conditions under which each occurrence takes place. It controls the mode of each occurrence because the causality of divine providence, unlike the causality of particular and secondary causes, extends to each being insofar as it is being;²² and since God cannot cause except what He wills and ordains to Himself as end, or will and ordain except what He knows, and since what He knows and wills and ordains He knows and wills and ordains eternally, the certitude of divine foreknowledge of the outcome cannot be excluded from divine providence.²³

To sum up: in the *Contra Gentiles*, divine providence is conceived as an eternal act of ordination of the divine wisdom, intellect, and will by which the whole world order and history of created being are realized exactly as they have been understood, affirmed, willed, and ordained in that eternal act. Thus, its certitude is both a certitude of

¹⁹St. Thomas attributed the creation of things in being also to an ordination of divine wisdom and intellect. "Et sic patet quod Deus produxit res in esse ordinando eas" (*CG*, II, cap. 24). Again: "Nihil igitur Deus facere potest quin sub ordine suae providentiae cadat: sicut non potest aliquid facere quod

ejus operationi non subdatur" (*ibid.*, III, cap. 98).

²⁰See *ibid.*, cap. 65-70.

²¹Cf. *ibid.*, cap. 71-92.

²²See *ibid.*, cap. 94-100; esp. cap. 95.

²³See *ibid.*, cap. 95 (*fine*); cap. 98.

²⁴See *ibid.*, cap. 163.

knowledge and a certitude of ordering or causality; and its certitude of ordering is not only the absolute and real but very limited certitude in the order of first acts or specifications (that is, of forms, essences, and essential ordinations in things) but also, and most especially, the conditioned certitude in the order of second acts or actualizations (that is, of existences, operations, actions and occurrences) whose conditions, though they may appear to have "just happened" to be fulfilled, have in reality been known, intended, and willed to be fulfilled by an all-knowing, all-ordaining, eternal, and immutable divine providence.

This evolution in St. Thomas's notion of providence and its certitude would logically call for a corresponding revision of his teaching regarding the relation between providence and predestination. In the very short chapter which he devotes to the question of predestination in the *Contra Gentiles*, he not only does not distinguish the certitude of providence from that of predestination but proves the kind of certitude involved in the latter from the kind of certitude in the former, on the ground that predestination is nothing but a part (*pars quaedam*) of providence. Just as divine providence, he says, does not remove contingency from the universe, so neither does divine predestination destroy man's freedom. Further, just as there is nothing which can be the cause of divine providence, so neither can the merits of man be the cause of divine predestination.²⁴

Though in the *De Potentia* St. Thomas does not treat the subject of divine providence *ex professo*, yet his observations about divine art may throw some light on his notion of divine providence at this period. For him the causality of divine art is not restricted to the mere production of things or to their conservation in being or even to the established uniform course of natural things in the universe. It extends to the whole world of finite reality as it was, is, and will be. The form therefore of the universe as it was freely, eternally, determinately, and immutably understood by God in Himself, affirmed and willed by Him as a *finis operationis* and ordained by Him to Himself as to the ultimate end, is the divine art, whose unfolding was merely begun with the creation of the universe and to which is due every ordination in the universe. Nature, therefore, which is the cause of the ordination only

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in natural things and in more or less uniform particular effects and occurrences which are in accord with it, is only part of the divine art. For the eternal ordination of divine providence, says St. Thomas, may call for effects and occurrences taking place apart from the causality of some or all particular causes.²⁵ Thus, St. Thomas confirms in the *De Potentia* the new doctrine on providence and its certitude first expounded in the *Contra Gentiles*.

But it is in the *Summa Theologiae* that St. Thomas seems to have made the first adequate synthesis of the precise roles of the two analogies with art and prudence in the proper understanding of divine providence, as well as of his notion of divine providence itself. How he has arrived at this is what the present section will attempt to explain.

In the first place, he distinguishes prudence from art:

Now it has been stated above that some habits have the nature of virtue, through merely conferring ability for a good work; while some habits are virtues, not only through conferring ability for good work but also through conferring the use. But art considers the mere ability for good work, since it does not regard the appetite, whereas prudence confers not only ability for a good work, but also the use, for it regards the appetite, since it presupposes the rectitude of the appetite.

The reason for this difference is that art is the *right reason of things to be made*, whereas prudence is the *right reason of things to be done*. Now *making* and *doing* differ . . . in that *making* is an action passing into external matter, e.g., to build, to saw, and so forth; whereas *doing* is an action abiding in the agent, e.g., to see, to will, and the like. Accordingly, prudence stands in the same relation to such human actions, consisting in the use of power and habits, as art does to external makings; since each is the perfect reason about the things with which it is concerned. But perfection and rectitude of reason in

²⁵Cf. *De Pot.*, q. 1, a. 3, ad 8; q. 3, aa. 16-17; q. 6, a. 1, ad 10, 12, 14, 19; q. 6, a. 6.

²⁶ST, I-II, q. 57, a. 4 (English Dominican translation, ed. Anton C. Pegis).

²⁷See *ibid.*, ad 1; also II-II, q. 47, a. 5.

²⁸See *ibid.*, II-II, q. 47, a. 1, ad 3; a. 8.

²⁹See *ibid.*, I-II, q. 57, a. 4, ad 3.

³⁰See *ibid.*, II-II, q. 47, a. 2, ad 3.

speculative matters depend on the principles from which reason argues. . . . Now in human acts ends are what principles are in speculative matters. . . . Consequently, it is requisite for prudence . . . that man be well disposed with regard to ends; and this depends on the rectitude of this appetite. Therefore, for prudence there is need of moral virtue, which rectifies the appetite. On the other hand the good of things made by art is not the good of man's appetite, but the good of the artificial things themselves, and hence art does not presuppose the rectitude of the appetite. The consequence is that more praise is given to a craftsman who is at fault willingly, than to one who is unwillingly; whereas it is more contrary to prudence to sin willingly than unwillingly, since rectitude of the will is essential to prudence, but not to art.—Accordingly, it is evident that prudence is a virtue distinct from art.²⁶

Besides this primary distinction, St. Thomas gives other differences which are, more or less, nothing but further precisions and clarifications of the above. Thus, he points out that art deals *only* with the making of things external to man, while prudence is concerned with human acts alone;²⁷ that the perfection of art consists in the act of judgment which pertains to the speculative intellect, while the perfection of prudence lies in its principal act, the act of ordaining which is an act of the practical intellect;²⁸ that in prudence there is counsel about matters regarding man's entire life and the last end of human life, while in art there is counsel about matters concerning the end proper to the art alone;²⁹ that prudence must always be practical, since it includes not only the consideration of the right reason (*recta ratio*), or the universal principles governing human acts, but also the application of this right reason to the human act itself, whereas art may not always be practical, since there may also be an art in the "making of speculative things" (*in quantum facit speculativa*), which kind of art may therefore be considered speculative.³⁰

In the second place, St. Thomas admits some similarity between art and prudence which make these two intellectual virtues more complementary to each other than contrary, more interdependent than

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independent. For both are virtues perfecting the practical intellect and dealing with the contingent and so are distinct from the other intellectual virtues,³¹ which perfect the speculative intellect and which deal with the necessary. Though the perfection of prudence lies in the third act and that of art in the second, nevertheless, being virtues perfective of the practical intellect, they both include all three acts of counsel (*consiliari*), judgment (*judicare*), and ordination (*praecipere*). Again, prudence is not only with respect to the individual's good (*bonum proprium*), but there can also be another species of prudence which deals with the common good (*bonum commune*). Thus, besides the prudence by which one governs oneself, there is also the other species of prudence by which one governs others.³² Again, prudence as well as art presupposes a knowledge of the singulars, since prudence deals not only with the consideration of universal principles but also and principally with their application to human acts and therefore with the singular necessarily connected with those acts.³³ Finally, the example which St. Thomas has often used to explain divine providence—namely, the military—involves both art and prudence: art, insofar as it is concerned with the production and disposition of things, and prudence insofar as it deals with the ordination of human acts to the common good.³⁴

In the third place, St. Thomas is now more concerned with understanding divine providence in itself (that is, in the light of what he affirmed of divine knowledge and will) than with merely seeking isolated points of similarity and dissimilarity between divine and human providence. Hence, in trying to arrive at a proper analogical notion of divine providence, he does not start with its analogy with art or prudence but with his already worked out notions of divine causality, divine intellect, and divine will. Divine causality of all good argues to divine causality of the greatest good; namely, the ordination of the whole world of finite being to its ultimate end, which is the divine goodness. This divine causality, in turn, points to the pre-existence of the said ordination in its divine Cause; and since God's

³¹These are *sapientia*, *intellectus* (in the sense of the habit, not of the faculty) and *scientia*.

³²Cf. *ibid.*, q. 47, aa. 10-11; q. 48, a. 1; q. 50, aa. 1-4.

³³Cf. *ibid.*, q. 47, a. 3.

³⁴Cf. *ibid.*, q. 50, a. 4, ad 1.

³⁵See *ibid.*, I, q. 22, a. 1.

³⁶See *ibid.*; also II-II, q. 49, a. 6.

³⁷See *ibid.*, II-II, q. 47, a. 3, ad 2.

³⁸See *ibid.*, q. 49, a. 6.

being is His understanding, this ordination of all things to their ultimate end must exist in God in an intelligible manner—that is, as understood by and in divine understanding itself, or, to put it more clearly but less accurately, as a divine idea, exemplar, or *ratio*. It is this eternal divine notion of all things, insofar as they are ordained and to be ordained to their ultimate end, that St. Thomas considers to be the aspect in the divine reality which corresponds to our proper analogical notion of divine providence. It is that which divine understanding, in understanding itself, principally understands when it understands and causes the whole universe of finite being. Only when St. Thomas begins to show the appropriateness of calling this all-embracing divine notion “providence” does he introduce the concept of human prudence.³⁵ For human providence is the right ordination of means to end, which ordination is the principal part of human prudence. Furthermore, human providence is of two kinds: that by which a person ordains his acts well to the end of life and that by which a person ordains the acts of his subjects to a common end. It is only in this second way that prudence and human providence may be suitably compared to God’s providence, for God is His own “end” and consequently there is nothing in Him that can be ordained to an end.³⁶ Besides, human providence also includes knowledge of the singulars about which human acts are performed, although the imperfectness of that knowledge involves human providence in uncertainty as to the outcome,³⁷ and the narrow field of human causality restricts human providence to the future and the contingent, for the past and the present have acquired, simply by their being actual, a necessity which puts them beyond the control of human providence.³⁸ Evidently the use of the analogy with prudence as a starting point requires so many restrictions, distinctions, and qualifications before one can derive from it a true analogical concept of divine providence, that St. Thomas apparently thought it better to consider divine providence in the light of the divine intellect, will, and causality, and to introduce the analogy with prudence only as a justification for the suitability of the name. For this reason, though he makes use again of this analogy in the *Summa Theologiae*, he does not revert to the

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De Veritate conclusion about the uncertainty of divine providence with regard to its outcome.

Similarly, though he does not again make explicit use of the analogy with art as a point of departure in his exposition of divine providence, he does, nevertheless, make use of it a great deal in explaining divine causality, divine knowledge and will, which are, so to speak, the elements with which he has constructed his notion of divine providence. Thus, divine knowledge is the cause of all things when the divine will is joined to it, just as the knowledge of the artist is the cause of his work of art when there is added to it an inclination to that effect, which inclination is through his will. Again, God's knowledge is the cause of things, whereas things are the cause of human knowledge, just as the knowledge of the artist is a cause or principle of his work of art, whereas his work is the cause of the knowledge of those who behold it.³⁹ In like manner the analogy with art is used to explain the divine ideas in regard to all and every created reality, not only the things directly and concomitantly produced in the beginning, but also everything that is to be subsequently added to these.⁴⁰ Finally, in his explanation of the all-embracing, all-inclusive character of divine providence, which he proves from the all-embracing, universal causality of God, he makes the further observation that "since God's knowledge may be compared to the things themselves as the knowledge of art to the objects of art . . . all things must of necessity come under His ordering; as all things wrought by an art are subject to the ordering of that art."⁴¹

To sum up: in the *Summa Theologiae* divine providence is the eternal divine notion of the whole world of being as ordained to the ultimate end; it therefore refers to both the divine intellect and the divine will, or, to put it more exactly, to the divine understanding in

³⁹See *ibid.*, I, q. 14, a. 8, et ad 3.

⁴⁰Cf. *ibid.*, q. 15, aa. 1-3.

⁴¹*Ibid.*, q. 22, a. 2.

⁴²By "first and second acts" are meant whatever in things is grasped by the "first and second acts" of the human understanding respectively. For an exhaustive study of this division of the acts of the human understanding as made by Aristotle and St. Thomas, see Father Lonergan's book, *Insight*, and his five *Verbum* articles in *Theolog-*

ical. Studies, VII (1946), 349-92; VIII (1947), 35-79, 404-44; X (1949), 3-40, 359-93. St. Thomas frequently notes that what man knows in diverse, successive acts, God knows in one, simple, "unrestricted" (Fr. Lonergan's terminology) act of understanding.

⁴³Cf. *ST*, I, q. 22, a. 4, ad 2.

⁴⁴For the certitude of divine causality and divine will, cf. *ibid.*, q. 10, aa. 6-8.

⁴⁵*Ibid.*, q. 22, a. 4, ad 3.

relation to the divine will. The analogy with art is very useful for an analogical grasp of this divine understanding of the totality of finite being as well as of its relation to the divine will; but the analogy with prudence provides the basis for the suitability of the name of providence given to it.

This evolution from the vague, indeterminate, abstract explanations of the earlier works (explanations which can just as well and just as easily refer to all possible worlds) to the eternal, immutable, determinate, concrete, all-embracing divine notion of the actual universe of finite being in its ordination to the ultimate end serves only to confirm and heighten the already well-defined doctrine of the *Contra Gentiles* concerning the certitude of divine providence. In other words, divine providence is no longer conceived as an essentialistic, formalistic divine concept of natures as ordered to one another and to an essentialized and formalized divine goodness as ultimate end but has become for St. Thomas the divine notion of the whole existing and changing multitude of distinct finite beings insofar as these are understood and willed in the intelligible actual unity and actual value of their total ordination to their ultimate end. Hence, the certitude of this notion is not merely in the order of first acts; that is, of forms, essences, and natures, which can hardly account for a dynamic universe shot through with contingency. Rather it is, first and foremost, a certitude in the order of second acts, grasped by the pure act of divine understanding in a single view as a completely and determinately ordered totality.⁴²

The certitude of divine providence, therefore, is twofold. It is, first, the certitude of divine knowledge, inasmuch as whatever God understands to occur cannot not occur exactly as it has been understood to occur.⁴³ Second, it is the certitude of divine causality and divine will,⁴⁴ inasmuch as divine providence implies not simply any knowledge but that knowledge to which the will is joined and which therefore causes what is known to occur or to be. Thus, divine providence is certain insofar as it "does not fail to produce its effect and that in the way foreseen,"⁴⁵ imposing on each occurrence, existence, and activity the kind of necessity which it ordains each to have, either the necessity compatible with freedom and contingency, or the necessity

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not compatible with these.⁴⁶ Consequently, in the *Summa Theologiae*, St. Thomas no longer mentions the differences he used to bring up in the *Commentary on the Sentences* and in the *De Veritate* concerning the certitude of predestination as compared with that of providence. For providence, as well as predestination, looks to the actual outcome of the ordering; and just as providence is the eternal, infallible, and determinate divine notion of the total order of all things to their end, so predestination is the eternal, infallible, and determinate divine notion of the direction of a rational creature towards the end of life eternal. Predestination, then, is simply a part of providence.⁴⁷ Its certitude does not differ from that of divine providence; namely, a certitude that involves the control of not only the occurrence of what is ordained and intended (*provisum*) by providence but also its manner of occurrence, since God produces and controls all being insofar as being.⁴⁸

Similarly, in his explanation of fate (in the Christian and not the pagan sense), St. Thomas does not place the immutability of the disposition, the seriation or order of secondary causes in the universe to their effects, in the immutability of the secondary causes themselves but in the immutability and certainty of divine providence.⁴⁹ Nor does he make all things depend on fate, for the simple reason that not all things are caused by secondary causes.⁵⁰ Consequently, since divine providence, for St. Thomas, extends to all things, not only to the ordering of the secondary causes and of their own effects but to the ordering of simply all created being and activity,⁵¹ the immutability of divine providence is not compromised by the occurrence in the universe of effects immediately caused by God.

The *De Malo* does not say much about divine providence except to confirm the doctrine in the *Summa Theologiae*. Thus it reiterates the immutability of divine providence and explains the perfect compatibility of such immutability with free will in creatures.⁵² It reaffirms the all-inclusive character of divine providence, explains the certitude of providence in terms of the certitude of divine knowledge and the efficacy of the divine will, and shows how this certitude of divine

⁴⁶Cf. *ibid.*, q. 19, a. 8, ad 3.

⁴⁷See *ibid.*, q. 23, a. 1.

⁴⁸Cf. *ibid.*, a. 6.

⁴⁹Cf. *ibid.*, q. 116, a. 3.

⁵⁰Cf. *ibid.*, a. 4.

⁵¹See *ibid.*, q. 22, a. 2.

⁵²See *De Malo*, q. 6, a. un., ad 3.

⁵³See *ibid.*, q. 16, a. 7, ad 15.

⁵⁴Cf. *In I Periherm.*, lect. 14; *In VI Metaphys.*, lect. 3.

knowledge and this efficacy of divine will and causality, far from doing away with contingency in things, insure this very contingency.⁵³

In his commentaries on Aristotle's *Metaphysics* and *Peri Hermeneias*, St. Thomas, trying to reconcile Aristotle's doctrine of contingency with the fact of providence, further confirms, in no uncertain terms, his notion of providence as found in the *Summa Theologiae*. In the first place, he again explains the infallible efficacy and immutability of divine providence in terms of the certainty of divine knowledge and the efficacy of divine will and causality with regard to the totality of finite being. In the second place, he reaffirms that the certitude and immutability of divine providence are in no way incompatible with chance, contingency, and free will in creatures by pointing out the uniqueness of the causality of providence, in that it causes not only the coming into being of things but also their nature, necessity, contingency; in short, everything that pertains to their being and everything on which they somehow or other depend.⁵⁴

If the above interpretations are correct, the following general conclusion may be proposed. The variations and differences noted by some of Aquinas's commentators in his writings regarding the causal certitude of providence are really nothing but the corollaries of a concomitant and parallel series of variations and developments involving the notion of providence itself. For as soon as St. Thomas has expressed his understanding of providence in terms of his understanding of divine knowledge, will, and causality and has given merely subordinate roles to its analogy with art and prudence, it becomes clear why the limited certitude he attributed at first to the causality of providence had to be expanded into the certitude proper to the absolute efficacy of divine knowledge and will as the universal and transcendent cause of things. Because God is universal cause, His providence must be certain with respect to all events and occurrences in the universe; because He is a transcendent cause, His causally certain providence not only does not impede but even insures the very contingency and freedom of created causes.

Freedom of Discussion." The next *Conversaciones Pensamiento* will be held at Loyola in 1962.

S. Y. WATSON, S.J.

THE MISSOURI STATE PHILOSOPHICAL ASSOCIATION held its thirteenth annual meeting on October 14 and 15, at the University of Missouri, Columbia. Professor Elizabeth Eames, of Washington University, discussed the topic, "Contemporary Analysis of Causality." While admitting that the empiricists' description of causality as temporal sequence was unsatisfactory, the speaker did not see how the other solutions were conclusive or passed the test of analysis. Mr. L. H. Hackstaff, of the University of Missouri, showed in his paper, "Logic, Old and New," that symbolic logic is more in continuity with, and a development of, Aristotelian Logic than is generally admitted. In the final paper of the afternoon, Professor John J. Kessler, of Saint Louis, made some observations on the functions of words. His paper bore the title "A Metaphysics for Semanticists." The outgoing president, Dr. C. Eugene Canover, of Lindenwood College, gave a competent and penetrating paper, "The Role of Philosophers concerning Convictions." Dr. Canover stressed the need for attention to context, philosophical, theological, religious, scientific, and so on, in any effort of language analysis, and discussed what presuppositions are at work or need to be established in any depth analysis of language. The discussion afterward was lively and enlightening. Saturday morning, from 9:30 to 12:00, a symposium was held on the "Philosophy of Religion and the Existence of God." The first speaker, Dr. T. William Bell, of Stephens College, discussed what religious knowledge means to the existentialists; Reverend Maurice Holloway, S.J., of St. Louis University, followed with a paper on the possibility of proving the existence of God through an analysis of the moral commitment of the adult to the moral good. In the final paper, Professor Arthur Berndtson, of the University of Missouri, revisited the ontological argument for the existence of God. The final upshot of any such argument, he showed, is to recognize pure possibility as the ultimate source of all finite actuality. Questions from the floor helped to clarify the different points made in the papers. The new president for the coming year is Professor Maurice Eames, of Washington University, with Professor James T. Reagan, of St. Louis University, remaining as secretary. The next meeting of the association will be held at Lindenwood College, St. Charles, Missouri.

"PHILOSOPHY AND THE INTEGRATION OF CONTEMPORARY CATHOLIC EDUCATION" is the title of a workshop to be held at Catholic University from June 16 to 27. The purpose of the workshop will be to study the contributions of philosophy to that data which is distinctive of contemporary Catholic higher education. Beginning with a study of the dimensions of reality and knowledge, the workshop will discuss, in its conferences and seminars, such topics as the relationship between science and philosophy, between moral philosophy and moral life, between philosophy and education, and so on. The director will be Reverend George F. McLean, O.M.I.; the lecturers will include, among others, Rt. Reverend John K. Ryan; Allan Wolter, O.F.M.; Benedict Ashley, O.P.; Robert Henle, S.J.; William Wallace, O.P.; Leo Foley, S.M.; and Dr. Donald Gallagher. For information, write to the Director of Workshops, Catholic University of America, Washington 17, D.C.

THE INSTITUTE FOR PHILOSOPHICAL RESEARCH has announced the completion of Volume II of *The Idea of Freedom*. It will be as large as Volume I and will deal with all the controversies about the subject of freedom. The Institute is also planning to publish a shortened and popularly written version of these two volumes. Mr. Adler, founder of the Institute in 1952, had also announced that his staff has begun a new project: an analysis of the idea of love. Other ideas being considered for subsequent treatment are progress, justice, law, democracy, and education. Mr. Robert G. Hazo has been appointed Associate Director of the Institute.

Körner on the Logic of Thinking: Some Queries and Objections

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When it was first published, Stephan Körner's volume on the logic of thinking¹ had a mixed reception, some of the reviewers thinking that it was, despite its importance, not easily intelligible.² Instead of adding another review of the whole book to those already printed, I shall discuss a number of separate positions which Körner has sought to establish. The book is difficult, partly because many of its words bear unfamiliar meanings but much more so because its author often changes the tactics of his exposition, so that a reader seizing the neatly branched terms in one chapter finds himself confronted by a quite new principle of division in another. This would be acceptable enough, indeed it would be a challenge, were we also told that the terms must alter their meanings as new levels

¹*Conceptual Thinking: A Logical Inquiry*. Published for the University of Bristol (Cambridge: Univ. Press, 1955). All page references, unless otherwise specified, are to this book.

²I shall excerpt passages from typical views. "... one of the most striking and original pieces ... in English since the end of the war. ... There is some danger that its importance may go unrecognized" (D. J. O'Connor, *Philosophical Quarterly*, VII [April, 1957], 183). "One or two of the basic notions ... are explained rather too sketchily" (*ibid.*, 184). "... difficult and demanding ... ambitious in that the philosophical territory that it covers is very wide ..." (J. O. Urmson, *Philosophy*, XXXII [July, 1957], 267). "... I suspect that Körner's use of some of the apparently precise terms ... involves the suppression rather than the elimination of some of the thorny difficulties in the notion of linguistic rules ..." (*ibid.*, 268). "... ambiguities and obscurities ... difficult to read. ... Its ultimate perplexities, however, are the philosophical problems surrounding conceptual thinking"

(H. A. Bedau, *Philosophy of Science*, XXIV [January, 1957], p. 89). "... ambitious and interesting ... merits not only commendation but careful study ... [attempts] to construct an original and all-encompassing system for solving the traditional problems of philosophy, along with providing a good many of the solutions themselves ... prodigious undertaking" (John O. Nelson, *Philosophical Review*, LXVI [July, 1957], p. 402).

³P. 10.

⁴Pp. 14, 13.

⁵P. 222.

⁶Professor Stuart MacClintock, in a paper on the question of the ontological neutrality of speculative medieval grammars (delivered at the annual meeting of the American Philosophical Association, Western Division, Spring, 1959), pointed out that it is very likely that there are modes of signifying in some languages radically unassimilable to others. In such cases, he added, translation would not be a clearcut matter of reduplication, but only "an approximation, or condition of proportionality."

in the inquiry are reached; but we are not so told. Indeed the whole effort of Körner appears to waver between a theory of explicit, fixed rules of usage of terms and a practice of shifting their meanings.

But Körner's book is refreshing. In spite of its being a work mainly about language-structure, it avoids both the tired dogmas of many Positivists and also the tortured grammatical misgivings of the newer analysts. Körner produces a constructive theory, with some room in it for metaphysics, aesthetics, and morals; yet he does without the artificial schemata of Positivists who draw up arrays of symbols and languages. In like manner, he is impressed very little by the doctrine which gives the man in the street the right to legislate, albeit unwittingly, concerning the subtleties of ontology and the axioms of the good life.³

1. NATURE OF CONCEPTS

To judge from the title of his treatise, the center of attention for Körner is the concept, which for him is a sign whose governing rules include a synonymy rule; that is, a rule which permits arbitrary replacement of that sign by any of its synonyms.⁴ "Signs" is an undefined term in his theory, and about all that he tells us is that discursive signs—which can be used as predicates, concepts, statements, and propositions—should include signs neither visual nor auditory.⁵ The discursive signs, which are chiefly those governed by ostensive rules, all have the property of interchangeability—not indefinitely, though it would be fruitless to try to specify just where the interchangeability must end. (Körner seems to have made a slip here, because predicates, one of the four types of signs, are differentiated from concepts by *not* being governed by synonymy rules. But perhaps he could explain this with little trouble.) It should be emphasized that rules determine not the fact that a proposition will be used but that it is used in a certain way. The addition of rules of synonymy is what makes the concept a concept, the proposition (which contains concepts) a proposition.

This raises a question about the replaceability of terms, either in everyday language or in philosophical. It seems to me that what distinguishes concepts is rather the uniqueness of each; and this is even shown by the fact that, contrary to what many Positivists say, the languages of the world seldom contain exact substitutes for each other. Prefaces to translations of the classics are strewn with disclaimers to the pretention that pivotal terms are rendered by anything like their proper counterparts. The translation of *Vorstellung* by "idea," "presentation," "representation," "mental image," is no better than the translation of *ousia* by "substance," "being," "entity," or whatnot.⁶ One can, it is true, think of certain concepts

which are from time to time replaceable by others. Thus Locke's "simple idea" is in some respects equivalent to Hume's "impression," but by no means in all; and it would be highly coincidental were these two concepts, which are the starting-points of theories traced out by totally different methods, to mean the same throughout all contexts.

2. ACCEPTANCE OF CONCEPTS

Körner has promised us the logic of thinking, insofar as thought deals with concepts. Now a well-known definition of thinking makes it the operation with signs,⁷ and Körner seems to take this for granted. But I feel that something more should be said by him concerning the relation of his "accepter of ostensive rules," which is in essence what he means by the conceptual thinker;⁸ and precisely what is it that the "accepter" accepts? Acceptance is belief,⁹ but what do we believe in when we believe in a concept? Do we believe that the concept is true? If so, the concept has sense; it is a proposition. Do we believe that the concept has meaning? If so, we are merely holding a tautology; we are merely holding that the concept, which must have meaning to be a concept, does in fact have meaning. Do we believe that the concept follows rules; that is, that its use in this case is following a rule? Or, to put it another way, do we believe a series of discursively arrayed rules to the effect that we, and other persons to boot, will be constrained to use a sign in such and such ways? Do we not rather immediately grasp the concept as having a meaning which derives from what is signified and then, later on, set about to formulate a few very simple descriptions of, and prescriptions for, the uses of the concepts? I am simply trying to make the most of an empirical fact that many persons are able to speak clearly and truly even if they remain quite

⁷Ludwig Wittgenstein, *The Blue and Brown Books* (New York: Harper & Bros., 1958), p. 6.

⁸See pp. 7, 31, 32 in *Conceptual Thinking*.

⁹Or better, "intention to apply." See pp. 5, 218.

¹⁰P. 7.

¹¹P. 3.

¹²Charles A. Baylis, in his review of Körner's books, has this to say: "His attempt to give an account of ostensive rules raises more questions than it answers. He notes that such rules are usually formulated by pointing to the particular things and saying that these and all things like them are to be called

instances of some concept, say, 'red.' But everything is like a red thing in some respect. Is it not necessary somehow to indicate the respect in which similarity is required, in this case likeness of color? But then, how are the ostensive rules for 'colored' to be set up? Presumably by pointing to some examples of colored things and generalizing to all things like them in some respect. But what respect? Basic difficulties such as these are not touched upon by Körner" (*Journal of Philosophy*, LIV [January, 1957], 53).

¹³*Concerning the Teacher*, chaps. 2-10.

unaware that rules of grammar can be formulated at all and that, in addition, philosophers in many instances almost completely neglect the forming of rules.

3. THE QUESTION OF LIKENESS

Let us return to Körner's grammar of naming. It boils down to the fact that for one great class of concepts, ostensive ones, we can say, "This and this (and here we make suitable gestures) and everything like it is to be called 'green.' " ¹⁰ Now this sort of interpretation is dangerous when what we seek is precise terms, for it implies that "like" is also a concept whose meaning can be pointed to, and that, even more remotely, "everything" is too. Or, if the concepts are not ostensive, they are still definable so as to be clearer to the acceptor of ostensive rules (and this includes children who call green things "green," says Körner). ¹¹ And there ensues thus the classic difficulty, noted also by Baylis, ¹² about the respect in which the likeness is to be sought, and, I should add, about the degree of likeness, even when the respect is known. St. Augustine ¹³ had much to say about the inadequacy of ostensive definitions when these are isolated and made to apply to individual things or acts; and Wittgenstein, who in several respects uses a method like St. Augustine's, himself shows that one of the chief difficulties with these definitions is precisely on the point of what constitutes likeness. But even if we could say, "This, this, and this, and everything else which has a color like these in respect of hue, not chroma or value, is to be called 'green' "—even then the matter would not be settled, for clearly blue is still like green in a fashion in which red is not. Without these restrictions, it is still worse; for when I point to "this" and say it is green, my hearer may easily think that to be green means to be the particular size of this green thing or to have some other characteristic. Even more, Körner fails to distinguish generic kinds of likeness. One shade of green is certainly like another shade of green in a way far different from that in which two large things are like each other or two events happening at the same time are like each other. Yet I find nothing in *Conceptual Thinking* to indicate that "large" and "simultaneous" differ radically as predicates.

I should also like to raise an issue about the meaning of "everything" in the phrase "and everything like it." If Körner wishes to say "and everything that you will encounter," then he is speaking so informally and so much *ad hominem* that his theory loses the precision I believe he wishes to impart to it. If, on the other hand, he means "and everything of the same sort, whether or not it becomes a part of your experience," then I beg to take issue. It is a statement which makes many assumptions about a

totality of things in the world—things, it happens, that are required to be all alike—and at the same time renders it impossible to name single things. The Colossus of Rhodes, lacking a duplicate or class of duplicates, could not be referred to in conceptual thought.

4. WHAT IS OSTENSIVE?

One of Körner's contentions is to the effect that a concept, in order to have an ostensive basis, must be free not only from internal contradiction but also from compounding. Although, he says, "'green' and 'shrill-sounding' are clearly ostensive concepts, the necessary exemplifying set (of green things pointed to) and 'like-it' clause are not available for either 'green and shrill-sounding' or 'green or shrill-sounding.'" ¹⁴ One may argue with this on two different grounds. If, to begin with, we deny that ostension in Körner's sense really fixes the meanings of terms (as I do deny), then we should add that the concern about the expressions of the so-called logical connectives is beside the point. In other words, though it is quite true that there is a distinction between "green" and "or," it is not to be expressed in terms of ostension and its absence. On the other hand, if we were to allow (as I prefer not to) that the simple concepts are ostensively fixed, then we may as well allow that their compounds are likewise, for the following reason, which I think is consistent with Körner's own principles. I point to a katydid, and I can well say that this is both green and shrill, and the same for everything just like it. Indeed, it is perhaps easier to communicate what I mean by these conjoined adjectives because the denotation is ever so much narrower than for "green" or "shrill" taken alone. About "green or shrill" I do have doubts. It would be far-fetched to look for cute instances that might suit this

¹⁴p. 38.

¹⁵I confess that I had hoped to find some confirmation for this in Jean Piaget's *Judgment and Reasoning in the Child* (New York: Humanities Press, Inc., 1952). But in spite of his dealing with a number of other words, chiefly the word "because," he does not take up the word "or." I therefore will stand for the time being on personal observation of a very young conceptual thinker (in my sense) in my own family.

¹⁶Pp. 17-18.

¹⁷See, for example, pp. 34-35.

¹⁸I know that some readers will have become increasingly annoyed by my references to interior properties of concepts—concepts which are, after all,

fabrications, with no natures of their own. But other artifacts—cars, poems, phonograph records of Alvin the Chipmunk—have many properties by which they are distinguishable, some of these being more essential than others.

¹⁹On p. 32, footnote, Körner promises a new book, on which he has collaborated with A. Fröhlich, dealing with his reconstruction of the mathematical treatment required for predicates, on the principles stated in *Conceptual Thinking*. Although I have tried to find references to this book in journals and catalogues I have evidently missed them and must accordingly apologize for dealing with no more than Körner's bare outline of his replacement for Boolean algebra.

expression; but it is not far-fetched to find one to fit "road to the right or to the left," where the two roads are integral in the total situation or where the "or" can be shown to be implicit in the fact that one can take but a single road at a time. Clearly a child can learn this sense of "or," if shown enough *unlike* choices, such as "strawberry or vanilla," "the dog book or the train book," and so forth.¹⁵ At any rate, it is clear that a child comes to know "or" through experience long before he can gather any abstract account, such as FTTF, of this connective.

5. CONCEPTS AND ENTAILMENTS

Körner offers three marks of proposition,¹⁶ the first of which is that only a proposition entails or is entailed. When we say, on the other hand, that *P* is contained by *Q* (both of them being concepts), we mean in addition that *Q* is implied by *P*.¹⁷ Concepts entail concepts, and by this Körner seems to mean not just any concepts but those which are often called subjects or predicates (in two propositions) or are called relata (in a single "relational proposition"). Entailment for him is thus not a process or form of reasoning, or a progress from one proposition to another, but is rather a matter of the assigned meanings of concepts.¹⁸ We pass from "cat" to "mammal" by an entailment, or from "green" to "colored," and we do this not by means of a middle term or a rule of *modus ponens* (both of which guarantee not only the correctness but also the newness of our result). I have no special quarrel with this theory. But it apparently leads to a great deal of philosophizing by tacit agreement, as it were. Many writers take for granted nowadays that a generic entailment or predication ("green as a color") is self-evident, that to be green is necessarily an instance of being a color, if for no other reason than that it has been used so often in essays of just this sort. But if green *is* in fact a color necessarily, then this necessity is the thing to be shown by some proof. The proof would not destroy the necessity, would not render the original statement an a-posteriori proposition. What I fear is that Körner has not left room for devices of proof by which to do this. If what we are interested in is relations between terms (concepts), all we can do with them, on his showing, is to describe how they are to be used, give their attendant rules, and let the necessary relations henceforward take care of themselves.

6. PRIMITIVE RELATIONS BETWEEN CONCEPTS

Körner, like many others, offers criticisms of Boolean algebras, and he lays special stress upon his new approach.¹⁹ (In what follows, I shall

mean by "Boolean," the text of George Boole himself, though no doubt Körner would be willing to add the work of Peirce and Schröder and, indeed, that of anyone seeking to calculate with fixed classes.)

Körner distinguishes between what he calls the three *exact* primitive logical relations (inclusion, as when "green" implies "colored"; exclusion, as when "square" implies "not round"; and overlap, as when "green" and "square" partially include each other, and partially exclude) and the two *inexact* primitive relations (one, that of inclusion-or-overlap, as when "black" sometimes includes "raven" and sometimes overlaps with "raven"; and the other, that of exclusion-or-overlap, as when "black" now excludes "sheep" and now overlaps with "sheep").²⁰ Notice that Körner has concepts whose meanings are made rigid in all contexts by rules and that he now finds it necessary to set up imprecise relations between them. Boole, on the other hand, invented an algebra of a very simple sort, asking only that concepts be held constant in their meaning while any given calculation was being conducted. It is quite true that he divided the universe exhaustively into x and $1-x$,—that is, x and everything not x —and likewise that he treated x and its simple negative, $-x$, as being exclusive of each other; but it is also true that these two pairs of terms could be made to symbolize indefinite negations if so desired. When Boole came to two diverse properties, such as green and red, or green and hard, then all he required was that each member of the pair be symbolized by a different letter, say, x and y . This gave him the well-known tetrad of things both x and y , things x but not y , things y but not x , and lastly things neither x nor y . It may be that we do not have Körner's inexact primitive relations here, in any one of the four sets of the tetrad. To this there are two answers: Nobody has said we could apply no more than one of the sets to a given situation, say a sheepfold; and furthermore, "classes" so vaguely related as Körner permits not only are hard to deal with but also betray a kind of accidentality of relation which forms but a feeble basis for scientific discourse.²¹ Thus the fact that ravens are black is true enough, I suppose (unless the ornithologists discover some white ones to keep company with the black swans that have confounded the logicians!), but here all the interesting possibilities for discussion end. It is simply false that "black" and "raven" are two terms (subjects, predicates, or

²⁰Pp. 34-37.

²¹Körner comes close to admitting this, I think, when he says: "In stating that the logical relation of inclusion-or-overlap holds between two ostensive concepts we do not imply either that, in the universe, every instance of the first concept is in fact also an instance

of the second, or that this is not so. We do not even imply that every instance of the first concept which is, ever has been, or ever will be observed, is also an instance of the second concept, nor do we imply that this is not so" (p. 95).

relata) which can have essential connection, even though we can convert "All ravens are black" to "Some black things are ravens." But in doing this we are no longer talking about "black" as a concept in the same sense as before. Our new, converse proposition is a weak accidental truth about kinds of things, without any of the epistemic force of the convertend, which after all does tell us something that may be strictly true about ravens.

7. WHICH WORDS REPRESENT CONCEPTS ?

Our author says:

A Boolean class-inclusion . . . can be represented on the one hand by the houses in a town whose perimeter is fixed and does not touch any house and, on the other hand, by the houses in a county whose order is similarly fixed, provided that the county surrounds the town. It is then, of course, always possible to indicate the houses which lie in the county but not in the town. We might, however, assume that the town lies within the county, that about some houses we know that they lie in the town and therefore in the county, that we also know how to give further examples of such; but, while assuming all this, assume also that nevertheless we do not know any of the borders. We then cannot give any example of a house which lies in the county but not in the town. In making these assumptions we should not be guilty of ostensive rules which makes it self-contradictory to say that *some* inclusions between ostensive classes (and therefore between ostensive concepts) have no exemplifiable and thus no ostensive complements.²²

But to this we say that it is not a question of manipulating a pair of concepts ("houses-in-county," "houses-in-town") but rather one of finding the proper meanings for certain other expressions as well, some of them being words not ordinarily considered to be concepts at all. This, of course, is not Boole's answer; and he would instead have reinterpreted his algebra to represent, not classes or even propositions, but probabilities that certain houses lie in the town as well as in the county, the total numbers being specified. Nor is the answer one that would be given by those making a sharp distinction between categorematic and syncategorematic words, or between variables and constants. I should complain to Körner that the little words cannot be taken for granted. What do we mean by saying that a house is *in* a town, or *in* a county, assuming that the latter has boundaries but that the former, the town, has none ? This could be a fruitful approach—to open up all parts of the proposition to semantic scrutiny, to suppose that two propositions containing the same subject

concepts and the same predicate concepts can still signify quite differently as long as we take seriously the variations in meaning of the connectives and particles. Surely the effort to assimilate the range of expressions to relations between substantive or adjective concepts—five relations, two of which are admittedly imprecise—would seem fruitless from the start.

I suspect that Körner has ignored the excellent suggestion from W. E. Johnson, that of separating of the elements of logic taken constitutively from these same elements taken epistemically. This suggestion implies that a proposition can be considered in its formal relationships to its negation or to a totally different proposition, irrespective of whether and how we know the original proposition to be true—or false. But the entertaining of the proposition with any but a wholly arbitrary assignment of truth-values involves knowing it, and this in turn requires that it be fitted into a system of ideas and sensations. Now, Körner starts with concepts, and he certainly intends these to be taken epistemically, though his view of them is open to some of the questions broached in this essay. But when he comes to treat concepts at length he handles them as if they enjoyed no more than constitutive relationships with their fellow-concepts. They are ranged into orders and types by him (I regret that space considerations outweigh the desirability of expounding his theory here and now²³) in such a way that they can function significantly only if their original meaning, their autonomy as concepts, so to speak, had been withdrawn from them and reapplied by systems of rules of use in hierarchies. I suppose this could be done well enough; but it seems to be an inversion of better philosophic insights to treat concepts as if they were like formal inferences and at the same time assert, without much proof, that they apply to things. Would we not be playing with counters rather than with coin?

As I look over these seven little sections, I begin to be remorseful that they are so much given over to demurrers, even cavils. More should be said in behalf of the book. My essay speaks not at all, for instance, about an interesting reinterpretation of the laws of thought (*Conceptual Thinking*, chap. 9), about an account of empirical laws of nature that deserves close attention (chap. 11), an inquiry into immediate experience (chap. 20), or

²²p. 40.

²³This is the chief topic of the second part of his book. Propositions have directly or indirectly given bases; they are descriptive or interpretive; and concepts are somewhat similarly stratified. There are, for instance (p. 149), horizontal and vertical entailments. The reason these topics are not being discussed here is that the other part, the concept considered as such, is

stressed by Körner and receives somewhat more original treatment.

²⁴What is really needed is a much more searching examination, written by someone with an orientation closer to Professor Körner's than is my own. My chief hope is that the questions I have raised will be of service to such a future commentator, who, after all, will be bound to lay bare the pros and cons of his judgment.

a chapter on the instrumental and contemplative applications of concepts. However often one might dredge up objections, these are still more than merely worthwhile contributions.²⁴ Almost none of my quarrels with the book derives from the opinion that it is slipshod (I hold no such opinion) but rather from my failure to see how a book on this subject can afford deliberately to omit or deny so much. Let us say it is needful to know about things and minds in order to illuminate the subject of words. Körner attempts to give a discussion of concepts *überhaupt*, but I think its very completeness of detail may have misled the author into believing he had achieved completeness of scope. This raises the interesting question whether the present survey of his book should have brought up a number of the issues it discusses at all. The only reply is to say that I was led to look for that second kind of completeness, a philosophical rather than a classificatory completeness, because I took seriously one word in the title. Had this book been headed *Concepts: A Logical Inquiry*, it may be supposed that I would have been ungrudging, though a little restrained, in praise of its tactics. But when a book is said to be about thinking, which is so much more complex and exciting, I begin to wonder whether it is using the right strategies.

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Le Philosophe et la théologie. By Etienne Gilson. Paris: Librairie Arthème Fayard, 1960. Pp. 259. NF 10.

Elements of Christian Philosophy. By Etienne Gilson. Garden City, N.Y.: Doubleday & Co., 1960. Pp. 358. \$6.95.

The Christian Philosophy of Saint Augustine. By Etienne Gilson. New York: Random House, 1960. Pp. 398. \$7.50.

Le Philosophe et la théologie is a witty, clear, and interesting account of the intellectual journey of its author from complete ignorance of the notion of Christian philosophy to the profound knowledge of this *philosophandi genus* drawn from a lifelong acquaintance with medieval philosophy. Neither his professors at the Sorbonne nor their contemporaries on the Catholic faculties of the day were of much help to him. The former simply assumed, with Victor Cousin, that, after a medieval hiatus in which "there was nothing but theology," philosophy resumed its progress with Descartes at the point where the demise of Greek philosophy had left it. The latter, whether friendly or hostile to St. Thomas, simply took it for granted that the Angelic Doctor, in common with the other medieval Scholastics, taught a philosophy indistinguishable in its main lines from that of Aristotle.

In 1905, however, Gilson's mentor, Lucien Levy-Bruhl, suggested as a thesis topic *Descartes et la scolastique*. The result was Gilson's major work, *La Liberté chez Descartes et la théologie* (Paris: F. Alcan, 1913). After its publication the thesis that Descartes had picked up philosophy where the Greeks had left it could no longer be maintained. Remove from the philosophy of Descartes the idea of God as the unique, simple, sovereignly free, creative efficient cause of the universe, or that of man as a creature, made in the image of God, and possessed of a spiritual and immortal soul, and you no longer have Cartesianism. Yet none of these ideas can be found in Aristotle. Their source, Gilson discovered, was not the philosophical treatises of the Greeks but specifically theological works of the medieval Scholastics. The theology of the medievals thus revealed itself as the seedbed of authentically philosophical notions which have subsequently been incorporated into the religiously neutral systems of modern Western philosophers. It was important therefore to examine more closely the

relation of philosophy to theology in the works of the Scholastic doctors, to whose creative thought so many of our modern philosophical ideas owe their origin.

The research required for the preparation of the early editions of *Le Thomisme* and *La Philosophie de saint Bonaventure*, and the fresh light thrown on the theologies of these two doctors by the controversies subsequent to the publication of these works, brought their author to two important conclusions. There had never existed in the Middle Ages a single philosophy common to all the Scholastics. Despite the similarity of their common Aristotelian technique, the philosophies of St. Bonaventure and of St. Thomas are radically different; and the same could be said of the philosophies of Duns Scotus and of William Ockham. Neither could there be found in the Middle Ages any autonomous system of philosophy proceeding from creatures to God according to the philosophical order and clearly distinguished from theology as a separate and independent discipline. All the medieval systems, including that of St. Thomas, were theologies; and what passes today for the philosophy of St. Thomas is, in most cases, nothing more than a series of theses extracted from their theological context in his works and rearranged according to the philosophical order by his modern interpreters.

Since the diversity of the various medieval theologies was due to the different philosophies employed by the Scholastic doctors as an instrument in their theological speculation, the genuine unity of their thought could scarcely be attributed to their common Aristotelianism. It is due rather to the common faith which animated these authors and to their unflinching practice of carrying out all their speculation, including philosophical speculation, within the framework of truth communicated to the Christian by divine revelation and accepted by him through the gift of faith. This was the principal theme of Gilson's *Spirit of Mediaeval Philosophy*. The spirit of medieval philosophy, Gilson concluded in that work, was the spirit of "Christian philosophy."

Christian philosophy, as it was found in the works of the Scholastic doctors, consisted of a series of genuinely philosophical propositions about God, the world, and man, which, since their evidence is purely rational, could be proposed by a modern philosopher as well as a medieval theologian. This philosophy, however, differs from the autonomous rationalistic systems of the modern philosophers in that it is an integral part of the science which St. Thomas calls *sacra doctrina*, the theological investigation of God and the world in its relation to God, which has its origin in the Christian's participation of God's knowledge through the virtue of faith. Revelation thus sets the problems for the philosophical speculation found in *sacra doctrina*; and revelation gives the philosopher

the light he needs to assimilate and transform the teachings of the pagan philosophers so that they may more accurately express the true nature of reality. What is proposed in the philosophical speculations of the Scholastic theologian rests always on genuinely philosophical evidence; but the Christian philosophy of the medieval theologians would lose its genuine character if it were taken out of its context in a *sacra doctrina* whose starting point is faith and whose order of development must be the theological order which descends from God to creatures.

Three decades of controversy have failed to shake Gilson's conviction that the philosophy of St. Thomas is a Christian philosophy in the sense that he has given to that term since the composition of *The Spirit of Mediaeval Philosophy*. Subsequently to its publication, he tells us in *Le Philosophe et la théologie*, he found confirmation for his position in his reading of *Aeterni Patris*. In that encyclical, Leo XIII recommends St. Thomas's *genus philosophandi*, philosophical speculation carried out under the direction of the truth of revelation; and this *genus philosophandi*, surely part of *sacra doctrina*, is called in the title of that *magna charta* of modern Thomism "Christian philosophy."

In *Elements of Christian Philosophy* Gilson explains in more detail how the philosophy of the Angelic Doctor, incorporated into his *sacra doctrina*, fulfills the requirements of Christian philosophy. It consists of a series of theses about God and the world in its relation to God; and its order of exposition is the required theological one. The notion of God, proposed by faith to St. Thomas the theologian, provokes a series of philosophical reflections concerning the demonstration of God's existence and the knowledge accessible to human reason of the divine essence and the divine names. It is in the light of our knowledge of God's pure creative *esse* that St. Thomas can explain philosophically what it means for a creature to be and to be a cause, and how it is possible for man to be a complete substance informed by an immortal soul whose intellect must find its perfection in the release of the intelligibility of material beings grasped in sense experience.

Faith proposed to the Angelic Doctor a notion of God richer and deeper than that of the Prime Mover of Aristotle and the First Cause and Supremely Necessary Being of Avicenna. It was revelation therefore which enabled St. Thomas in his philosophical reflection to absorb and transform their proofs of God's existence, mutually exclusive in their own systems, in the constitution of his own *quinque viae*. From the scriptural name of God, *I am*, St. Thomas drew his master thesis that *esse* is the act of being; and his theological consideration of God's dynamic *esse*, proceeding within the Godhead in the processions of the Trinity and proceeding out of the Godhead in the creation of the being of creatures, enabled him to

transform Aristotle's moving cause into the efficient cause *quae influit esse in aliud*; even more, that same consideration of participation in the divine dynamic *esse* enabled St. Thomas to ground the substantial reality and proper causality of creatures more firmly than it had been ever grounded before. The same act of *esse*, received in the simple human soul which then associates the body with its substantial reality, enabled him also to establish philosophically a point which on purely Aristotelian principles is undemonstrable, that the form of a body can be an immortal, spiritual substance. Released thereby from the necessity of preserving the soul's immortality by dissociating it from the body in the Platonic manner, St. Thomas can give the body its proper share in man's substantial being and activity. Man is not a soul using a body; man is the union of soul and matter without which the soul could not begin to be, and without which the sense knowledge on which its intellectual operations are dependent could not be obtained.

St. Thomas clearly is not simply another Aristotelian philosopher. He is a Christian theologian who, reflecting philosophically on God and the world under the inspiration of revelation, has absorbed and transformed the doctrine of the Philosopher. The Angelic Doctor, in other words, is a Christian philosopher.

A masterly exposition of a very different Christian philosophy is found in *The Christian Philosophy of Saint Augustine*. This book is a translation of the second edition of *Introduction à l'étude de saint Augustin*. Dr. L. E. M. Lynch is to be commended for his excellent and eminently readable translation of a text which remains, in the opinion of the reviewer, the finest modern introduction to St. Augustine in any language. In its three main sections—devoted to knowledge, moral life, and the works of God—all the major Augustinian themes of sense knowledge, divine illumination, grace, freedom, creation, time, the image of God in man, and so on, are discussed with the clarity, conciseness, and synthetic power which are the marks of M. Gilson's work as a historian.

For Gilson the distinguishing note of a Christian philosophy is its notion of being, found in its highest perfection in the notion of God, from whom it radiates its light on creatures. For St. Thomas, the notion of being was *id quod habet esse*; and God was supremely being because He was supremely *esse*. For St. Augustine, He is supremely being who is supremely true in immutable and eternal necessity. It is interesting to observe therefore how in his Christian philosophy the notion of creation, the proof of the immortality of the soul, and the conception of human knowledge differ from these elements of the Christian philosophy of St. Thomas described by Gilson in his *Elements of Christian Philosophy*. According to St. Augustine the matter created by God must be formed by

the divine illumination in order to receive a share in the divine stability; and with changeless stability rather than *esse* as the ultimate reality, St. Augustine is never willing to concede to mutable creatures the same autonomy in being and activity which St. Thomas assures to them through participation in the divine *esse*. Nor will St. Augustine be able to make use of *esse* to show how an immortal, spiritual substance can still be truly the form of a body. For him, the soul is immortal precisely because it is not an Aristotelian form but a spiritual substance, ruling a body on which it can act as its superior while remaining immune from its counter-action. Sensation therefore must be an action of the soul alone; and the necessity of our true judgments, possessed of a stability which fluctuating creatures cannot ground, must come through the divine illumination from the Truth which rules its inferior, the mind, as the mind in turn rules its inferior, the body.

St. Thomas's metaphysics of *esse* leads to a theory of knowledge in which being, causality, contingency—in short, the data that lead the mind to a philosophical proof of God's existence—are given to us in our sense experience of physical reality. St. Augustine's metaphysics of necessary truth, on the other hand, leads to a theory of knowledge according to which the evidence for God is found within the mind as the necessary truth which is the object of its dynamism. St. Augustine and St. Thomas are both Christian philosophers; both transformed a pagan philosophy under the influence of revelation; but while St. Thomas transformed the philosophy of Aristotle, St. Augustine transformed the wisdom of Plotinus; and of the two, Gilson is convinced, St. Thomas was the more successful.

In the three books discussed in this review it is not hard to discern M. Gilson's conception of the philosophy of St. Thomas, the philosophy to which he gives his personal adherence. It is a Christian philosophy, carried on within the sacred doctrine accepted by the grace of faith and necessarily following the theological order of development. It is an Aristotelianism, radically transformed by the repercussions in the whole system of the authentically Thomistic notion of being as *id quod est*, yet remaining Aristotelian enough to find its proofs for God's existence and its introduction to metaphysics in the physical world presented in sense experience. Faithful to that basic orientation, its theory of knowledge is a frank and downright realism that rejects any approach to epistemology which would ground the necessity of our judgments on any sort of contribution to their immutable necessity by the human mind. We are already in the realm of the being of metaphysics in the material objects presented to our intellect in sense experience, or we will never reach it. The man who begins his quest for being within his mind will never find his way out into the world of reality.

It is not surprising therefore that the interpretation of the philosophy of St. Thomas presented in *Le Philosophe et la théologie* and in *Elements of Christian Philosophy* has not won universal approval among contemporary Thomists. Gilson's conception of Thomism as a Christian philosophy may have won the approval of Thomists as eminent as Jacques Maritain; but it has also been attacked vigorously on historical grounds by scholars of international reputation, such as Van Steenberghen and Vignaux. And it must be admitted, in all fairness, that Gilson's insistence on the necessity of the theological order of development in any genuinely Thomistic synthesis is a doctrine hard to bear. Certainly Father Hayen saw no urgent necessity to follow that order of development in his recent exposition of the philosophy of St. Thomas, *La Communication de l'être d'après saint Thomas d'Aquin*. Furthermore, there are many serious reasons why a modern Thomist should not employ this order in his dialogue with contemporary philosophers who know no order other than the philosophical approach to God through creatures. A number of these reasons have been cogently presented by Dr. James Collins in his excellent article, "Toward a Philosophically Ordered Thomism" (*New Scholasticism*, XXXII [July 1958], 301-26).

Against Gilson's theory of knowledge we find drawn up in battle array all the Thomists of the Marechalian tradition, who draw their inspiration from the more Augustinian and Platonic elements in Thomism which Gilson does not emphasize in his exposition of St. Thomas. Thomists of high repute, such as Lotz, Hayen, Marc, de Finance, and Coreth, whose influence is powerful in Europe, are living testimony to the fact that, in the opinion of many Thomists, the path to God and being begins within the human mind; and the metaphysics of inner experience and of the mind's drive to the changeless truth beyond the mutability of human sense and intellect is as much an element of the Christian philosophy of St. Thomas as it is of the wisdom of Augustine.

Perhaps this radical disagreement merely proves that the philosophy of the Angelic Doctor is too rich to be captured in its fulness by any Thomistic synthesis, even in one made by a historian as keen and penetrating as M. Gilson. But he himself would be willing to admit that fact, and this is why he urges us in *Le Philosophe et la théologie* not to become the slave of St. Thomas's commentators but to go beyond them to long and careful contemplation of the works of the saint himself. This, he says, is the true art of being a Thomist. Few can hope to practice it with the insight, urbanity, and synthetic power displayed by M. Gilson; but many, we are sure, will be helped and encouraged in their effort to acquire it by the splendid introduction to Christian philosophy provided by the three books discussed in this review.

***Our Experience of God.* By H. D. Lewis. New York: Macmillan Co., 1959. Pp. 302.**

H. D. Lewis is Professor of the History and Philosophy of Religion at King's College in the University of London. He is also the present general editor of the "Muirhead Library of Philosophy" and recently personally edited the third series of *Contemporary British Philosophy*.

In a sense one could say that Professor Lewis's latest book, *Our Experience of God*, is a discussion, in a contemporary Anglo-American atmosphere, of the traditional problem of "God transcendent *versus* God immanent," or "the God of philosophy *versus* the God of religion." Lewis discusses the problem with a keen awareness of the emphasis that modern atheistic humanism, logical empiricism, and linguistic analysis put upon experience.

Lewis, of course, will not agree with the accusation which logical positivism throws at religion (namely, that its propositions are meaningless) or with that of many analysts, that it is the field par excellence where one falls into hopeless confusion of expression. Nor will he agree that there is any necessary opposition between the alternatives presented by the traditional problem. God, he everywhere insists, is transcendent; He is unique and incomprehensible. Indeed, the realization of the existence of a being who transcends our universe and is its source is the basic religious experience discussed throughout the book. But the book is also, and especially, dedicated to showing how from this experience emerge patterns that make one's whole personal, daily, life a religious one, so that God becomes most immanent, most personal, in His relations with us. The "beyond" is somehow also a "within." A "major theme" of the book is "the need for an enlivened personal apprehension of God and the guide and corrective which this supplies to beliefs and attitudes which become false by becoming stagnant" (p. 51).

In his opening chapter, Lewis is very insistent that religious expressions are meaningful; but he also thinks they should be reserved for activities and attitudes that involve some awareness of a transcendent being, for not every total commitment is a "religion."

In the next chapter we learn that Lewis believes that all of us can have, and most of us actually do have, an insight into the inevitability of the existence of some infinitely perfect, personal, uncaused, and unconditioned source of the real world that confronts us. However, he does not believe that the existence of God can be strictly demonstrated. We have the same certitude of God's existence as we do of truths in mathematics and logic;

only, we have no proof. In a single "leap of thought" we ascend to both the meaning and the inevitable being of the "infinite" and "un-derived" (pp. 60-61). Lewis speaks approvingly of the approach taken by his fellow-Welshman, Dom Illtyd Trethowan, who holds that we get to know the existence of God by looking "at what being stands for until it breaks into finite and infinite" (p. 43). Lewis is not prepared to accept the ontological argument; but his sympathies lean in its direction: "at the very heart of religion lies this quite unique notion of something of which we cannot conceive at all without seeing at the same time that it must be" (p. 44).

We come to know the truth of our personal religion through experiences which have this peculiarity about them that while they are themselves finite—that is, have a content appropriate only to finite things like ourselves—they nevertheless refer, and can be seen to refer, to something that is not finite (p. 58).

Life and man have come into being through an evolutionary process ("a matter largely beyond dispute" [p. 73]), and religion has a naturalistic origin. But, interestingly enough, Lewis believes that primitive religion was not polytheistic, that pluralistic forms of religion might well be corruptions of a more unified religious life.

Lewis, under the influence of Rudolf Otto, considers the sense of "the numinous" to be basic, insisting that this sense does not exist independently of all relation to the transcendent, contrary to what certain atheistic humanists contend.

In Chapter V, which deals explicitly with religious experience, Lewis first briefly discusses the affinities and differences between art and religion. Both give us a sense of the irreducible mystery of things; religion, however, arouses a special wonder peculiar to itself. Lewis then points out the circumstances that evoke this religious wonder and the internal or external crises which precipitate the leap which takes the mind beyond finite things. This experience, as we are shown in the next chapter, easily merges into other experiences, and one's life takes on a pattern of religious experience. Our sense of objectivity is reinforced. Our perceptiveness of the world around us is heightened. In particular, we appreciate better the distinctions to be made in ethical matters; we see their objective quality.

Chapter VII is given over to a discussion of the notions, images, and symbols that religion employs. Here Lewis takes exception to some of the theories advanced by Austin Farrer in *The Glass of Vision*. He also differs from Jung in the question of symbols. These are significant for religion only to the degree that they reflect a distinctively religious stand in experience, "enabling us to acquire firmer and more germinative over-all impres-

sions of the patterns of the occurrences in which the character of God is disclosed" (p. 145).

In Chapter VIII the role of theology is discussed, the theologian being likened to an art critic. Of the relations between philosophy and theology Lewis says:

Philosophy is a good generator of theological thinking, and theology as we know it has been much encouraged and expedited by the meeting of marked philosophical thought with a sharp consciousness of a particular course which religion was taking, pre-eminently in the union of Greek philosophy and Hebrew-Christian experience (p. 154).

Most of Lewis's discussion of dogma concerns the dangers to which it exposes the religious soul. Indeed, he had earlier told us that "reactionary authoritarian dogmatism is the major menace of our civilization" (p. 38). What is central for religion is not dogma but living encounter and personal experience. There is no theme to which he wishes to give more prominence in the book than that "religion counts little without the sense of the presense of God" (p. 158).

Interesting chapters follow on the material factors in religion, on rites and ceremonies, on ascetical practices, on ornaments, instruments, sacred objects, music. Lewis cautiously discusses their relevance to religion and their help in evoking and sustaining religious experiences, though he is always anxious to point out the ways in which these can degenerate into magic and superstition. His discussion of the Christian sacraments is not satisfactory, as he does not sufficiently appreciate the doctrine of supernatural grace or the role of the sacraments as channels of this grace. He so stresses the effect of the sacraments that derives *ex opere operantis* that the effect deriving *ex opere operato* is ignored. For instance: "Even if the changes [for example, those involved in Transsubstantiation] are known to occur, their religious import is nil except in relation to what they help us to think and feel and do in our relations with God"; ". . . it is not enough to attach certain spiritual conditions to the efficacy of the material performances; we must also insist that the efficacy must itself be understood entirely in terms of changes in the mind or personality of those who participate in the sacrament—or perhaps those they may influence"; and, ". . . I should be reluctant to draw any absolute distinction between the ceremonies which are definitely sacramental and other forms of religious ritual" (pp. 183, 184).

The relations between art and religion, touched upon earlier, are explicitly discussed in Chapter XIII. Lewis is convinced that authentically religious imagery and symbolism must be rooted in traditional imagery.

There are two chapters on the preternatural, in which Lewis admits the

occurrence of preternatural phenomena but is very solicitous to point out the possibility of error and the care we must take not to put the essence of religion in the preternatural.

Then comes a chapter on miracles and on prayer in general, followed by a special chapter on petitionary prayer. Lewis discusses these matters honestly and cautiously. He has some fine remarks on the life of prayer.

Chapter XVIII is given over to a discussion of the relations between religion and morality. Naturally Lewis finds a very close connection between the two. Still, he emphatically rejects the idea that we can argue from the objectivity of ethics to the existence of God or to any other truth about Him. Indeed, to do so is to relegate God to a very remote, peripheral position, after the fashion of the deists, instead of having Him the live center of religion, encountered as the living voice of individual conscience, "a real person disclosing Himself in moral experience and expressly concerned about our conduct above all" (p. 267). Morality especially is the field where finite experience is "transmuted into the disclosures and operations of the transcendent within the world we know" (p. 268). In this chapter, Lewis takes occasion to point out how Christ on the cross shows the unlimited character of God's involvement in the world and how this gives assurance that suffering is not pointless.

A final chapter is dedicated to "encounter and immediacy." In this Lewis again stresses the idea that, though there is no absolutely immediate union possible with God, still encounter with the divine can be very personal and very common. He insists that Christians must try to induce a sense of immediacy by creating the social environment in which tradition may be rediscovered and perpetuated without becoming stale. He warns against letting religion become excessively institutionalized, and he ends the book with an exhortation that we be living witnesses to what Jesus was and did.

It is remarkable how much conviction Lewis derives from experiences, even though he does not have a solid metaphysics on which to support himself. He will not trust any discursive reasoning from a datum of experience up to God. But he has an all too common misconception in this regard, for he tells us that the traditional First Cause argument "invites the rejoinder that on our premiss that everything must have a cause [*sic!*], the alleged 'first cause' must have a cause as well" (p. 41). And with regard to how we know anything about the nature of God, Lewis mistrusts the doctrine of analogical knowledge; he believes that it "does not in fact yield anything" (p. 54; cf. p. 182). He has doubts about the existence of demons; he does not see how their existence could possibly be known. It is not clear whether Lewis denies common traditional teaching concerning the Fall, Original Sin, and allied doctrines or only rejects some exaggerated

expressions (cf. pp. 28, 62, 69-70, 88, 161, 163 and 172). We have already mentioned his misconceptions about the sacraments. He exaggerates the dangers of the institutionalization of religion and does not, in my opinion, show sufficient appreciation of the truth-value of dogmas and of corporate worship. He underestimates the role of genuine religious authority, which is not surprising, as he does not seem to believe that there has been a strict supernatural revelation given by God. In short, despite his empiricism, there is a quite pronounced strain of religious rationalism running through the work.

Lewis's method is in many ways admirable. The discussions are carried out in a sober, common-sense fashion, with an occasional slyly witty remark thrown in. He proceeds slowly and prudently, trying to see matters from all angles; he is constantly qualifying his concessions and leans over backwards to give no offense to the agnostics.

Lewis insists that the awareness of the transcendent is possible, probably easy, for everyone, even the simplest. Still, his own book is written on a very sophisticated level. Also, it is often unnecessarily obscure and vague. What does one really remember from sentences like these:

If . . . it can be shown that religious events or processes, and the interplay of these with other factors of experience, have some patterns which encourage the belief that they represent the dealings with us in the matters of most concern to us of another personal Being, there is scope again for the excitation of the profoundest emotions according to the turn the relationship takes at particular times; and if, on the basis of the way this religious strand of men's experience as a whole has been woven, there are produced certain general notions about its significance which contain further possibilities of acute dramatic tension, these notions, both when they are warranted and when they are not, will bring additional emotional charges into outstanding religious occurrences (p. 118).

Or, again:

. . . the vision, whether it be strictly a vision, like those of St. John of the Cross or St. Theresa, or some strange and exalted experience of which 'vision' is the nearest rough description we can give, has its main worth, not in what it is in relative detachment, but in the extension (and concentration too) of what has become significant in our own experience through appropriation into the fullness of our own life of what we find most distinctive in the religiously animated social existence of which we are a part (p. 234).

In spite of these criticisms, the book is worth while. It tries to meet

the "gentiles" on their own grounds. Lewis wishes to be religious without sacrifice of intellectual integrity (p. 18), and in this he succeeds. He is a sincere and capable philosopher, and a sincere and practical Christian. He may not win converts to theism, but he will make it more respected in certain somewhat hostile quarters. Among believers his book should be the occasion of an enlivened religious experience.

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Philosophy of Labor. By Remy C. Kwant, O.S.A. "Duquesne Studies, Philosophical Series," Vol. 10. Pittsburgh: Duquesne Univ. Press, 1960. Pp. xi + 163. \$5.25.

This book is both a criticism of the Marxian philosophy of labor and an attempt to formulate a philosophy that adequately expresses the "prevailing influence" of economic conditions upon human existence and, in particular, the effect of labor upon the social, political, and spiritual orders. On the one hand, the author criticizes the thesis that labor is an adequate starting-point of a philosophical system; on the other hand, he believes that philosophies that have not developed a philosophy of labor have failed in their task of creating a full philosophical expression of human life.

Although Father Kwant is unusually fair to Marx, he misrepresents the Marxian philosophy of labor in at least one important respect. In criticism of it, he argues that labor is not the absolute center of human life and that man's activities are too complex to be reduced to productive labor. Marx was not guilty of such a reduction, and even the author shows some doubt on this point in commenting upon the ambiguity in Marx's fundamental thesis of economic determinism. Since Marx argued that labor determines the rest of human life only as a necessary and not as a sufficient condition, his thesis that man produces his own life in a social way means that labor only "in the last analysis" is the center of human existence; hence there is no disagreement with Father Kwant's formulation that "the heart of history, the infrastructure is already a human phenomenon and as such implies all the essential characteristics of man." Obviously, economic or labor determinism—technology is itself a function of labor—does not explain all human phenomena.

One of the major contributions of this volume is its implicit distinction between the Marxian political economy of labor—which the author defends against its conventional critics, especially economists who still cling to the "ideology of profit"—and the Marxian philosophy of labor. The importance of this distinction lies in the fact that Marx's political economy of labor may serve as the foundation for other philosophies of labor besides a

dialectical materialist one. Although Father Kwant rightly insists that Marx's "metaphysics" is not the basis from which his philosophy starts but rather a development of it—Marx's philosophy of nature is an extension of his philosophy of social history—he also notes that the Marxian philosophy of labor contains materialistic presuppositions. These are rejected as inconsistent with a deeper existentialist conception of man, although he does not hesitate to incorporate the bulk of Marx's analysis and critique of capitalist relations of production into his own philosophy of labor. The influence of Marx's earlier writings, especially those showing traces of his Hegelian apprenticeship, is also evident throughout much of Father Kwant's book; namely, themes from Marx's *Economic and Philosophic Manuscripts* based upon the paradoxes of man's self-alienation in the labor process.

In Father Kwant's interpretation, a philosophy of labor is designed to answer such questions as: What are the paradoxes of labor? Are these paradoxes a necessary part of the labor process? What is the role of labor in human life? What are the stages in a philosophical history of labor? What is the nature of labor? What are its implications? Since these are not questions of concern to either economists or sociologists, it is the philosopher's task to answer them. However, one may question whether this book develops a philosophy of labor or a philosophy of work. Assuredly, it is a philosophy neither of, nor for, the labor movement in the sense of other works with a similar title, such as Delisle Burns's *The Philosophy of Labor*, and Frank Tannenbaum's *A Philosophy of Labor*. The author rejects the narrow meaning of the term "labor," which is practically coextensive with manual and technical work, in favor of its broader philosophical significance. Thus labor is defined as a human activity exercised according to common rules and common customs, implying the acceptance of a system of rights and duties that belong to the general social order. Although one implication of this definition is that all workers are laborers, it does not follow that all work is equally dignified or that labor, in the narrow sense, is not a travail. In this light, the book's central concern is the philosophy of work—in the tradition of Adriano Tilgher's *Work: What it has Meant to Men Through the Ages* and Paul Schrecker's *Work and History*.

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Review of Renaissance Concepts of Methods. By Neal Ward Gilbert.
New York: Columbia Univ. Press, 1960. Pp. xxvi + 255. \$6.00.

Any perceptive reader of the primary sources in the area called modern philosophy (for example, the works of Bacon, Hobbes, Descartes, and so on)

cannot but be struck by their critical views of the past coupled with their insistence on a new approach; in a word, on method. It is the intention of Gilbert to examine the intellectual climate, remote and proximate, in which these storms arise, for he is ". . . convinced that Renaissance discussions of method had not been sufficiently explored in their full breadth" (p. vii).

More concretely, this work takes its point of departure, first, from the researches of Ernst Cassirer on Zarbarella's two methods—the compositive and resolute; and, secondly, from the work of John H. Randall, Jr., ". . . on the rise of scientific method in the school of Padua" (p. xiv). The author's own approach to these problems is characterized as that of the "historian of philosophy," to whom falls, he insists, "the analysis of ideas about *method* expressed by scientists" (p. xix) and nonscientists. This approach is contrasted, perhaps unjustly, with "the historian of science, who alone is qualified to judge of the contributions made to the techniques and concepts of a science by Galileo or any other scientist" (p. xix).

In order for his readers to maintain historical perspective throughout this work, Gilbert, aware that ". . . it is difficult to realize that the talk of method in the Renaissance may not have concerned *scientific method* in our modern sense at all" (p. xv), spells out the characteristics of "the modern 'scientific method.'" In this way the history of the question will not be read backwards but forward.

With this caveat, the task at hand is confronted with dividing ". . . the entire discussion of method into two large categories, that dealing with *artistic* method and that dealing with scientific method" (p. xxiv). The first is concerned with the teaching of the arts and with communication, and has its roots in the Socratic tradition. The other "was the contribution of Aristotle who developed explicit criteria of demonstrative procedure that went beyond what Socrates had demanded of an art and that represented, in a sense, a carrying out of the mathematical program of the older Plato" (p. xxv).

Fully cognizant of the Greek background (and sometimes medieval) of Renaissance discussions, Gilbert lays it bare with respect to these two schools of method. In Chapter 1 he discusses, first, the Greek sources of Renaissance discussions of methodology and then the medieval sources. The former includes Plato, Aristotle, the Stoics, Galen, and the Greek commentators on Aristotle. The medieval sources are the Latin commentaries on Aristotle. All this purports to be what the author calls "the history of the concept of method" (p. 39) and is followed in Chapter 2 by a discussion of the history of method as a philosophical term. This chapter recapitulates and supplements the information on Plato up to the

Greek commentators exposed in Chapter 1. Moreover, it adds discussions of *methodus* as a Latin philosophical term, humanist distaste for the term *methodus*, and Renaissance etymologies of this term.

Such a division and separation (into different chapters) of concept and term sets up an artificial and unnatural tension, leaving the reader with the impression that the concept of method is being discussed apart from the term and vice versa. Such an obscurity may well explain some disconcerting remarks on Aristotle (pp. 6-8). But this is not to say that these chapters are not stocked with all sorts of interesting information. Of special interest is the section devoted to Galen, whose influence on scientific methodology is just now being generally recognized. Also the discussion of geometrical method in the Greek commentators, though brief, can help to deepen the significance of Descartes's reading of Pappus of Alexandria.

All the varieties of these ancient discussions on method—*methodos*, *techne*, *methodus*, *via*, *via doctrinae*, *ordo doctrinae*, *ars*, *analysis*, *resolutio*, *synthesis*, *compositio*—find their way into the Renaissance and the humanist movement for reform in education. More especially, this reform centered on method in teaching and "insistence on speed is typical of the Humanists: the arts must be learned 'as quickly as possible'. In a phrase favorite with them, the Humanists had no intention of 'growing old and gray in the study of logic', or in any of the other arts" (p. 71). Thus the author charts this humanist wave as it engulfs logic, grammar and rhetoric, history, the quadrivium (especially geometry), law, medicine, and theology. Its products were those compendia, epitomes, brief arts, resumes, much lamented by those who clearly saw them as "endangering the serious mastery of subject matter" (p. 114). On a larger scale, the impact of this humanist reform was no less profound:

In short, the influence of Humanism in this medical methodology resembles its influence in other fields: doctrines which purported to rest on authority must be shown by conclusive linguistic textual grounds to be supported by a passage in the sources, in the original language. This meant the shifting of philosophical discussion from the presentation and refutation of arguments to the scholarly examination of classical passages. Medieval exposition, which was a mixture of philosophical examination and scholarly quotation, or *ratio* and *auctoritas*, was beginning to yield to a division of labor in which the authorities were left to the scholar and reasoning to the philosopher" (p. 107).

Thus we are here confronting, to a degree, what is present in our day—the absence of philosophy and philosophizing to its history and vice versa.

This influence of humanism on philosophy is "dealt with in the second part of this study" (p. 114). Though "all the subjects that made up academic philosophy (i.e. those subjects dealt with by Aristotle in the *Organon* and in the *Nicomachean Ethics*, *Metaphysics* and natural philosophy) could and did give rise to methodological discussions" (p. 115), Gilbert studies the two methodological traditions as they come "to grips in logic or dialectic" (p. 120). More exactly, he concerns himself with the development of method as a topic in the textbooks of the "dialecticians"—those Humanistically oriented writers who emphasized the finding part of dialectic and its utility in speaking and reasoning" (p. 120). As "to the other school of methodological thought (the scientific), we cannot give such thorough attention, for its examination would carry us back into the thirteenth century" (p. 121).

The dialecticians who are studied explicitly are Melanchthon, but briefly, and Peter Ramus, more extensively. The latter is characterized as one of the outstanding methodologists of the arts for his espousal and defense of the "single method." Indeed, Ramus has been the subject of a recent profound study by Father Walter J. Ong, S.J., which was not in print when Gilbert was doing his research. Thus, in our day this is evidence that the dialogue on Ramus, at least, has not fallen into decay.

Gilbert treats in some detail the position of Ramus with its dominant emphasis on the *ordo doctrinae* (pp. 142-43) and juxtaposes it alongside the violent reactions of the Peripatetics, the most determined of whom is Carpentarius. For this man "takes Ramus to task for neglecting the method by which arts are originally investigated at the expense of the manner in which an art already discovered is disposed" (p. 148). In addition, the opposition of Bartolomeo Viotti, a medical Aristotelian, and of Jacob Schegk to Ramus is plotted.

In contrast with these storms which whirl north of the Alps, the climate in Italy is calm and serene and "the traditional authorities remained in esteem" (p. 164). In this tranquil atmosphere, Gilbert discusses Ludovicus Buccaferrea, Jacopo Zarbarella, Francesco Piccolomini, and Jacobus Mazzonius, who are in the tradition "set by Averroes and the Scholastics" (p. 180). A "non-Scholastic trend" is exposed in Giacomo Aconzio, Girolamo Borro, Giulio Pace, and Scipione Chiaramonti.

And in the midst of all these discussions on the Contingent, England listened, heeding the call of Ramus or the critics of the "single method." The volume ends on a note of uneasy peace with an examination of Bartholomew Keckermann, "a conciliator and reconciler of the two main traditions of methodology" (p. 220).

Out of these immense labors of research, having culled texts from all sorts of works difficult to find and, once found, difficult to read and under-

stand (all of which puts future scholars of this question in his debt), Gilbert draws his general conclusion:

So far as practical effect upon methods of scientific investigation goes, the result of these long and wordy controversies was minimal, although in a few fields of thought the arts methodology laid the grounds for the revamping of techniques of exposition, for instance, in law or history. So far as theoretical effect goes, there is no question but that in reviving the subject of method and in studying the philosophical works of the ancients, these Renaissance scholars were setting up a demand for a method which was to be answered, in the form of philosophical programs, in the next century, and were also furnishing some hints from classical thought which do not altogether disappear from view even though the seventeenth century did not care either to mention or to read what their predecessors had written on the subject" (p. 231).

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***The School Examined: Its Aim and Content.* By Vincent Edward Smith. Milwaukee: Bruce Pub. Co., 1960. Pp. xiii + 300. \$5.75.**

This is a philosophical consideration of the school, though the author's view is that "because philosophy as such knows utterly nothing of the Christian or supernatural dimension," the book is, "properly speaking, theological rather than philosophical" (p. viii). One could just as well say that because the principles controlling the analysis are discovered and defended by reason, the book is philosophical rather than theological. The philosophy in question is that of a student of Aristotle and St. Thomas. The school in question is the liberal arts college first of all, and the high school and grade school as preparatory to college.

The first controlling principle is the nature of human knowledge, which is abstractive and progresses from a confused notion of a thing to a more definite notion. Progress in knowledge uses induction and syllogism, the discursive means of knowing. The teacher, whose art helps the student acquire more precise knowledge, will imitate nature by using these discursive means. Thus "the primary function of a teacher is to teach" knowledge (p. 35), though his moral influence is undoubtedly great; and "with all these qualifications, it can be argued that the aim of the school is an intellectual one" (p. 37). More precisely, it is to help the student put discursive order into his knowledge. Consequently, "if a subject is teachable to the extent of involving discourse, and if science (in Aristo-

telian sense) involves the most perfect kind of discourse, science alone is perfectly teachable" (p. 42). Other modes of discourse—dialectical, rhetorical, literary—are less perfectly so, and thus their subjects are less teachable.

The second controlling principle is that the nature of knowledge is determined by the object and the consequent order among knowledges arising from the object known. Some objects are known for the sake of knowing and generate speculative or liberal science; some are known for the sake of doing or making and generate practical science. Among the objects of liberal science, three sorts of formal objects are known: material things able to be sensed; things as having intelligible matter; things as being, whether material or immaterial. In each of these sorts of liberal science there will be one science dealing with first principles; and all other sciences treating the same formal object will be a detailed and specialized consideration, with no first principles of their own. Thus the natural sciences will all be extensions under the general science (philosophy) of nature, just as "mathematics is one basic discipline, primarily arithmetical in character" (p. 84).

By employing these two principles the scientific order among knowledges with the same formal object is determined. First come the knowledges dealing with the first principles and afterwards the knowledges that are progressively more specialized. The third controlling principle, the pedagogical, determines the order in which various classes of sciences should be learned. The order of discovery is from the easy to the difficult. The easy is what is already known in experience. Thus the pedagogical principle is that "sciences requiring little experience should be taught first, those demanding more should be deferred, and the science presupposing the maximum experience should be left to the end of the pedagogical order" (p. 90).

In the light of these principles the author sets up the following order among the disciplines. First come the logical arts: logic, grammar, and rhetoric. Logic precedes the scientific study of language, because it supplies the principles that unify the language arts (p. 105). Second come the mathematical arts: arithmetic (and algebra), geometry (and trigonometry and analysis), applications of mathematics to being with periodic motions. Mathematics comes after logic because it deals with constructions about the real world, whereas logic deals with mental constructions (p. 131). Third come the physical sciences: general science (philosophy of nature), physics, chemistry, biology. General science lays down the first principles of mobile being, and the study of the soul supplies the first principles of living being (p. 162). Fourth come the social sciences, which demand more experience on the part of the learner than

do the natural sciences. The social sciences are ethics (laying down the principle, the end of man), political science, sociology, economics. They are all practical because there is always a question of good or bad concerning their objects. History is not strictly a science but is necessary to enlarge the experience on which ethics and the other social sciences are grounded and is thus reductive to "ethical knowledge as part of its preparation" (p. 205).

Fifth comes metaphysics, which gives shape to the liberal college as being the wisdom in which all natural learning culminates. It is reserved to the end of the curriculum "because it requires the maximum of experience; it requires the calmness of emotion as aided by ethics" (p. 236). Also, metaphysics relies on the general science (philosophy) of nature to prove by reason there is an immaterial being (p. 227) and to see most clearly the analogy of being (p. 229). Metaphysics integrates all the other sciences as a final cause does and lights up their first principles, defends the principle of non contradiction, and bestows its liberality on all liberal sciences which prepare for it. Sixth and last comes sacred theology, dealing with God and all things as related to God. Theology is the most certain of knowledges, because its first principles are revealed; it is the most liberal, because there is no science beyond it (p. 261). The proper order of theological topics is that of St. Thomas's *Summa Theologiae*. All pre-scientific knowledge prepares for the sciences and all sciences prepare for theology as the top Christian wisdom (p. 286).

This brief review of the movement of the book indicates the insight that generated it. This insight is that for each area of scientific knowledge there is one which deals with first principles and which by rights should come first. Isolating the skeleton of the book does not, of course, give any notion of the color of the flesh. Though there "are many practical problems, untouched in this more general discussion" (p. 289), the number of problems, both speculative and practical, that are treated is enormous. Most of the problems that move around in the school get shot at. A few samples will make this clear.

"All the great errors in the history of ideas involve a misconception or misuse of logic" (p. 17); religious knowledge is not "an affair of indoctrination" (p. 20); "stimulation of need, puzzle problems, or as Plato and Aristotle said, wonder, normally requires dialectical activity by a teacher" (p. 56); logic is "only reductively liberal, liberal in the use to which it is put, namely the pursuit of wisdom" (p. 67); "the moral virtues of the citizen are not the end of the liberal curriculum" (p. 72); "if there is one direct preparation for metaphysics that can be achieved in pre-college years, it is in figurative art" (p. 103); "mechanism is usually associated with an overemphasis on the sense of sight" (p. 114); mathe-

matics is not a language, though it "has a language, a grammar, a syntax of its own" (p. 124); mathematics is "perfect in giving us exhaustive knowledge" (p. 128); mathematical physics is not "a basic discipline. It is a science in a derivative and secondary sense. It is a hybrid discipline" (p. 132); "non-Euclidian geometries are dialectical" (p. 139); "speculation becomes practical by extension" (p. 185); a truly scientific ethics can be anchored in a "vague and somewhat indeterminate end, albeit a certain one" (p. 190); the real distinction is not scientifically known to be universal "until we show that in God alone are essence and existence identified" (p. 234); without theology taught as a science and wisdom "the college curriculum will not be integrated in an orderly Christian way" (p. 280).

Here are some practical positions: "logic has been too closely identified with the philosophy program of the modern college" (p. 109); possibly "we have not pushed mathematical physics down far enough into the curriculum but have reserved it mostly for college" (p. 142); it is good "to regard nature study in the grades as a kind of natural history" (p. 180); if for reasons of administration "sociology, economics, and politics must be introduced before a formal course in ethics can be squeezed in, these modern social sciences can no longer be viewed in a synthetic and scientific amplitude; with no perspective of first principle, they cannot be taught as sciences" (pp. 221-222); engineering or agriculture or home economics cannot "be taught liberally" (p. 248); "a truly liberal college today might be a rarity. And perhaps this is the way it should be" (p. 247); we might decide "that metaphysics is not for everybody" (p. 253); if sacred doctrine were learned well in high school, we would use "Part I of the *Summa* as the basis for a freshman course, Part II as the meat of sophomore and junior programs, and Part III as the senior subject" (p. 282).

The strength of Professor Smith's examination of the school is that it employs the norms of the disciplines themselves, not some extraneous norms that happen to appeal to the examiner. Subjects known on the level of science make their own demands, since it is these which are to be understood. This fact cannot be repeated too often in our day, when accrediting agencies love to analyze (and approve) schools in terms of the *end proposed*, as if the end of the school were purely a matter of *proposal* and not also a matter of knowing subjects the way subjects demand to be known. One who reads Professor Smith need not have that problem again.

Besides the demands of the subject known are the concomitant demands of the knowing act itself: that learning go from the easy to the difficult; that what requires less experience come before what requires more experience. These principles are given a place in this examination, but they

do not seem to operate evenly. For instance, they are decisive in the case of metaphysics, which is put late in the curriculum; they are not operative when logic precedes rhetoric. They are operative in the very plan of the book, for the author holds that since metaphysics shapes the school on the natural level, "we might have begun by defining wisdom" (p. 226)—instead he begins with the easier notions of communication and teaching. They are not operative when Part I of the *Summa* is taken as the basis for the freshman theology course. The reader wonders why such principles operate so unevenly. It may be that the author is not fully convinced that science is as rampant among college students as good opinion.

The main problem in carrying out an analysis with two sets of principles is to get some norm for their joint application to one set of facts. And this problem becomes especially acute whenever the data analyzed includes essential and existential factors, both equally critical. In such cases, and the actual school is such, it is not quite enough to decide that in this area of the curriculum the essential principles will control and in that the existential principles will. Both must be operative in each area and, quite probably, differently in different areas. And to sort out the proper influences of both sets of principles would seem to require a more detailed consideration than this present book provides.

What it does provide is a significant consideration of the essential demands that arise from the subjects themselves. Even those who may disagree with Professor Smith about this or that essential relation between this or that subject owe him a debt of gratitude for this present examination of the school. And philosophers who wish to continue work on this problem will find helpful his frequent references to the writings of St. Thomas.

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***The Mirror of Philosophers.* By Martin Versfeld. New York: Sheed & Ward, 1960. Pp. 301. \$5.75.**

Martin Versfeld is a professor of philosophy at the University of Capetown. This is the second of his books to be published in the United States, the present volume having been preceded by his *A Guide to the City of God* in 1958. We sincerely hope he has more in store for us.

By his own admission, this is a book more constructed than written. Substantially it is a collection of previous articles somewhat modified and put into order by connective passages to give us several philosophical themes with enough autobiographical material thrown in to exemplify the thesis that the philosopher is the man. This South African Chesterton is a humanist as well as a philosopher and he knows how to use many

mirrors. He is not, however, an illusionist; the burden of the main argument which lies behind the title is that not concepts but things are the true images of reality—Being Itself is mirrored in beings.

Cartesian rationalism is the devil let loose in modern philosophy. Professional philosophers will want to ponder Versfeld's accusing Kierkegaard of Cartesianism in the chapter "Kierkegaard and Metaphysics" and his linking of the antirationalism of Nietzsche, Dostoevsky, and Chestov with Descartes by way of modern science, whose foundation he laid (see p. 196). This theme is developed in "*Physis and Nomos*" with a critique of modern science, while in the chapter "Leon Chestov" we have a fascinating exposé of the thought of that little-known modern apostle of the irrational.

Among the twenty-two chapters, or essays, there are pieces on the nature of philosophy, existentialism, atheism, the idea of progress, agreement among philosophers, and—worthy of special mention—a piece on Comte, "The Goddess of Humanity," and a philosophic penetration of Marlowe's *Faustus* called "The Pool of Narcissus."

The concluding chapters are devoted to St. Thomas Aquinas. Professor Versfeld has an enjoyable literary style characterized by liberal use of paradox and elegant punning. In the final chapters allusiveness and rhetoric become so turgid as to almost drown the thought. This is, withal, a book of brilliant insights which also contains many statements of basic Thomism so well written that teachers of philosophy will want to recommend them to their students (see pp. 270 f., for act of existence, knowledge; pp. 278 f., the virtue of magnanimity). To obtain the proper stimulation this book should be taken in small doses.

Archiv für Geschichte der Philosophie. Vol. XIII, No. 1. Berlin: Walter de Gruyter & Co., 1960. Pp. 116. Annual subscription, DM 36.

After a lapse of twenty-seven years, the *Archiv für Geschichte der Philosophie* is again active, now edited by Paul Wilpert of Cologne, with the co-operation of Glenn Morrow of Philadelphia. The last editor of the original series, Arthur Stein (son of the founder), gave his rights in the journal to the present editor. Hence, this new publication can be legitimately looked on as a continuation, particularly inasmuch as it intends to follow in the spirit of the original journal.

The first number contains three articles: "Religion and Natural Philosophy in Empedocles' Doctrine of the Soul," by Charles H. Kahn; "Die Entwicklung der Dialektik bei Petrus Ramus," by Wilhelm Risse; and "Natural Belief and the Enigma of Hume," by Ronald J. Butler. There are also two long book reviews: the first of W. G. Rabinowitz's *Aristotle's 'Protrepticus' and the Sources of Its Reconstruction*, reviewed by Paul Wilpert; the second, of Averroes' *Tahafut al-Tahafut*, translated and annotated by Simon van den Bergh, reviewed by Marion Soreth.

The first issue is a realization of the ideal which the editor proposes and likewise gives rise to the hope that the new series will win a wide acceptance.

G. P. K.

Geschichte der Philosophie. Die Philosophie im ersten Drittel des zwanzigsten Jahrhunderts, II. By Gerhard Lehmann. "Sammlung Goschen," Vol. 850. Berlin: Walter de Gruyter & Co., 1960. Pp. 114. Paper, DM 3.60.

The treatment of twentieth-century philosophy in this volume is covered under two headings: phenomenology and ontology, and the movement from pragmatism to neorealism. Under the first heading, there are brief accounts of Brentano, Rehmke, Driesch, Husserl, von Pauler, Scheler, von Meinong, Pichler, Janssen, Hartmann, and Jacoby. Under the second, Schiller, James, Dewey, Watson, and Russell. Each section begins with an introduction and concludes with a selective bibliography.

Lehmann has a gift of easy compression and so manages to give a thorough account in very brief compass. Even when he seems somewhat unsympathetic, as in the discussion of Husserl, he remains fair and balanced.

G. P. K.

***Humanismo y Mundo Moderno.* Trans. Jose Oroz, O.R.S.A. Madrid: Libreria Editorial Augustinus, 1960. Pp. 321. 100 pesetas.**

This is a series of conferences, held under the auspices of "Studium Christi" in Rome and first published in Italian in two volumes, *Umanesimo e Mondo Moderno* and *Umanesimo e Mondo Contemporaneo*. The general purpose of these conferences was to help men find a more harmonious unity for their lives by reconsidering the function of humanism in today's world. The particular aspects treated are easily understood from the titles of the papers which are thirteen in number. They are the following: "Interpretación del Humanismo del Renacimiento," by Giuseppe Toffanin (pp. 13-33); "El Humanismo y el Pensamiento Protestante," by Mario Bendiscioli (pp. 35-64); "El Humanismo y la Filosofía Moderna," by Cornelio Fabro (pp. 65-95); "La Filosofía de Blondel y el Humanismo Cristiano," by Michele Federico Sciacca (pp. 97-111); "El Hombre del Existencialismo," by Cornelio Fabro (pp. 113-36); "El humanismo de la Esperanza y de la Fidelidad en Gabriel Marcel," by Régis Jolivet (pp. 137-52); "Problemas Modernos y Perspectivas Humanístico-Cristianas," by Giuseppe Gemmellaro (pp. 153-91); "Premisas Biológicas para el Estudio de la Persona Humana," by Mario Torrioli (pp. 193-203); "Exigencias Humanas en la Economía Contemporánea," by Francesco Vito (pp. 205-28); "La Persona Humana y la Experiencia Jurídica," by Aldo Moro (pp. 229-46); "La Pedagogía del Humanismo Contemporáneo," by Aldo Agazzi (pp. 247-70); "Las Ciencias y la Filosofía en un Humanismo Cristiano," by Carlo Giacon, S.J. (pp. 271-93); and "La Síntesis Cristiana de los Valores del Hombre Moderno," by Raimondo Spiazzi, O.P. (pp. 295-319).

The translator has written a brief introduction, pointing out the importance of the general problem; he has also given a biographical and bibliographical notice for each of the contributors.

G. P. K.

***Libre arbitre et jugement.* By Joseph Lebacqz, S.J. Brussels: Desclée de Brouwer, 1960. Pp. 164. Paper, 120 f.b.**

The problem discussed here is technically a Scholastic one, though in a larger sense it touches on the basic view of man. The problem is, How is

the act of freedom to be thought of? The investigation begins with Aristotle, who seems to have considered it an act of both intellect and will; his commentators divided the acts of intellect and will, and explained freedom as an act of choice preceded by an act of the intellect. The early history of this problem is then traced in the Latin West, with its culmination seen in the writings of St. Thomas. In these writings, the author finds an unresolved difference of texts (election is one act; it is an act of will preceded by an act of intellect), which he maintains cannot be solved by a chronological investigation, since he thinks to find both expressions even in the *Summa Theologiae*. Then he follows the discussions of the commentators on St. Thomas, concluding that their controversies over this problem are insoluble. He contrasts this doctrine with that of Blondel, who did not distinguish intellect and will as two faculties.

In the second section of the book, the author discusses the proofs for the real distinction of intellect and will, and concludes that they are not demonstrative. In his third section, he proposes, instead of a distinction of faculties, a distinction of three stages of finite activity: tendency, adaptation, acquisition; the second corresponds to cognition; the third to volition. Next, he distinguishes degrees of development in these stages, holding that every act of knowledge is followed by an act of will (quoting the adage, "Every form is followed by an inclination"), if not to the object, then to the knowledge of the object. He is then led to two types of judgment: one which discerns and another which decides. Thus, he can finally assert that one sort of judgment, the "ultimate practical judgment," is itself the act of choice. Finally, he comes back to the problem of the distinction of faculties. He does not want to hold a simple real distinction or a pure and simple identity. He finally attempts to state a real distinction of two powers which taken together make up one power of activity: one is the principle of specification, the other of exercise.

That there is a real problem in the analysis of freedom is shown quite clearly. Next, the author is successful in showing that any attempt to view intellect and will as distinguished equally (*ex aequo*) leads to untenable consequences, and to make the choice follow the last practical judgment in time also leads to such consequences. In considering the text of St. Thomas still obscure and confused, the author is aware that Dom Lottin has indicated a development and even a formal reconsideration of the nature of choice. It seems almost as if, like most of the commentators, he cannot take St. Thomas seriously; he knows and repeats the words "formal" and "material causality," and takes this to be efficient causality. If the alternatives are efficient causality between faculties or their nondistinction, there seems little to be gained either way.

G. P. K.

***Mathématiques et métaphysique chez Descartes.* By Jules Vuillemin.**
Paris: Presses Universitaires de France, 1960. Pp. 188. Paper, NF 16.

Professor Vuillemin is already well known for his two historical studies on the physics of Kant and that of the neo-Kantians in relation to recent physical theories. He tells us that he began the present study also as an account of Cartesian physics. However, he found sufficient wealth of new materials in the area of Cartesian mathematics and its bearing on philosophy to justify a separate work.

His originality derives from using Descartes's mathematical writings as a basis for reinterpreting aspects of his doctrines on method and metaphysics. A close analysis is made of those remarks in Descartes's *Geometry* which can be generalized and applied to the philosophy. But the author also noticed that Descartes's correspondence is a rich source for discovering how he treated of some logarithmic curves which could not be accommodated in the *Geometry* but for which he found a treatment, using logarithms as a kind of anticipation of the infinitesimal calculus. Thus a whole group of Descartes's letters are now seen to have mathematical and philosophical significance.

On the philosophical side, Vuillemin's researches furnish us with a more precise meaning for the general method of order and proportion. We can classify and order the particular arguments in Cartesian metaphysics somewhat after the fashion of classifying kinds of equations, using their degree of distance from the prime certitude of the *Cogito* as the basal measure. Other stimulating mathematical comparisons are found for the methodic rule of making frequent enumerations and reviews, as well as for the notion of achieving a continuous reflective movement for all parts of philosophy. By bringing the mathematical and metaphysical aspects of Descartes's mind closer together, Vuillemin has fulfilled his aim of clarifying Descartes the philosopher by means of a study of Descartes the savant.

J. C.

***Metafisica e Spiritualisti Italiani Contemporanei.* By Sante Alberghi.**
Milan: Marzorati Editore, 1960. Pp. 317. L. 2,400.

One of the strongest and most prolific tendencies in present-day Italian philosophy is the philosophy of the spirit. Until now, most of the expositions have been made either by the leading proponents themselves or by general historians describing this movement along with several others. The Alberghi book fills the need for an orderly survey devoted entirely to philosophy of the spirit and a survey long enough to bring out the different contributions of its leaders in a balanced way.

The first hundred pages consist of a sinuous description of the cultural and philosophical situation leading up to this philosophy. A review is made of the various attempts made especially in Italy to provide a satisfactory human ideal centered around civic duty at one extreme and the subjective life of art at the other. But our interior life cannot be satisfied with devotion to the common temporal good, and neither can it find its capacity for transcendence realized in the forms of art. Hence the perspective of a religiously oriented metaphysics is opened precisely by the frustrations of modern social and private existence. The author then makes a sharp criticism of Groce and Gentile for concentrating too exclusively upon immanence, whether in the mode of rationality or in that of act. One feature of this book is its stress upon the shortcomings of previous Italian idealism, whereas most commentators on philosophy of the spirit emphasize its continuity with the idealistic positions.

Long individual chapters are then devoted to each of the leaders in philosophy of spirit: Carlini, Guzzo, Sciacca, Stefanini, and Battaglia. In the study on Armando Carlini, the point is clearly made that he regarded Maurice Blondel as the master who showed him how to revise Gentile's immanentist actualism and thus to open up the analysis of spirit to the relationship with a personal God. This excellent account of a contemporary European philosophy concludes with an exhaustive, ten-page bibliography of the relevant publications, including articles.

J. C.

***Die Natur des Menschen.* By Georg Siegmund. Würzburg: Echter-Verlag, 1955. Pp. 167.**

Human nature is here considered from the viewpoint of the relations between philosophy and medicine. The author begins his presentation by showing through examples the insufficiency of a purely Positivistic science of man. Next, he shows that modern medicine is making many efforts to treat man as a whole, though often such efforts consist in replacing an exaggerated dualism of mind and body with a monism. This way of viewing man is equally unsatisfactory; so the author proposes instead that doctors view the soul as the "form-principle" of man. On the basis of the unity of man there is to be a "Ganzheits-Medizin," which seems unfortunately to be too similar to the so-called "Ganzheits-Biologie" proposed by some philosophical biologists. Doctors are not to split the treatment into two parts, the psychic and the somatic, but what is proposed instead seems at times to be a sort of psychological "naturopathy." A calm and reasonable control over the passions seems to be his formula for health of body as well as soul. The norm of nature thus conceived is used to criticize

the work of Kinsey (who is also said to have neglected biology in favor of sociology), psychiatric treatment based on Positivist or materialistic assumptions, and some faulty views of matrimony. In the final chapter, glowing accounts of life among the Huns are used as examples to solve problems that arise in matrimony.

G. P. K.

***Orientazioni Metafisiche.* By Aimé Forest. Trans. Italo Gotta. Milan: Marzorati, 1960. Pp. 139. Paper, L. 1,800.**

The Institute of Philosophy of the University of Genoa, under the direction of Professor Sciacca, has sponsored the publication of original works and also translations of writings of authors whose thought is akin to that of Italian Christian spiritualism. The present volume belongs to this series and consists of periodical articles and lectures of Aimé Forest of the University of Montpellier translated from the French into excellent Italian. The book is divided into two parts, of which the first is made up of five studies in the history of philosophy. The second part has five essays in a more speculative vein. The editor has selected for translation historical articles which discover spiritual relationships between such French thinkers of different periods as Pascal and St. Bernard, Biran and Le Senne, Malebranche and Lavelle. In the other studies of the first part, Forest takes the view that idealism is one philosophy which preserves interiority as the distinctive character of spirit, and he reflects at length on the notion of philosophy as prayer (*una filosofia orante*), a thought inspired by Blondel in *La Pensée* and *L'Action*. The second part of the book contains short writings on topics of common interest for the French philosophers of spirit and subjectivity, and for the Genovese group. Art and metaphysics, the sense of order, the meaning of dialogue, communication, and grace and liberty are the subjects of Forest's further reflections. Though the volume is not highly technical in a philosophical way, it offers much of value and interest to the Italian-speaking philosophical public.

L. A. B.

***The Philosophy of Mathematics.* By Stephan Körner. London: Hutchison Univ. Library, 1960. Pp. 198. 12/6.**

The present volume belongs to the series published by the Hutchison University Library on philosophical subjects, and its author is one of the leading British analytic philosophers. By way of introduction a brief historical sketch of the views of Plato, Aristotle, Leibniz, and Kant is

presented. Then the author discusses the three leading philosophical programmes for the reconstruction of classical mathematics, logicism, formalism, and intuitionism, dedicating a whole chapter to exposition and another to criticism of each of these three systems. Körner analyzes them from three aspects. First he asks how each one envisages the general structure and function of the propositions and theories of pure mathematics; secondly, how they view applied mathematics with its peculiar propositions and theories; and lastly he investigates the role of the notion of infinity in each. The final chapter of the volume is an original essay on the nature of pure and applied mathematics.

As one might expect, none of the traditional schools of mathematics satisfies completely the author's conception of an adequate philosophy of mathematics. In developing his own philosophy, Körner makes use of what he calls "the logic of exact and inexact concepts." As regards pure mathematics he maintains that the concepts and propositions of any mathematical theory are purely exact; that is, disconnected from perception. The propositions of applied mathematics, or the application of pure mathematics, represent the results of the interchanging of perceptual and purely exact statements. The technique of the so-called logic of exact and inexact concepts is clearly presented, and it enables the author to cope with the problem of the relation of mathematics to perception to his own satisfaction. Some of this matter he had discussed previously in a recent book, *Conceptual Thinking* (Dover Publications, New York, 1959) and in an article, "Determinables and Resemblance" (*Proceedings of the Aristotelian Society*, Supp. Vol. XXXIII, 1959).

For the most part Körner avoids metaphysical questions and follows a plan of analysis. In presenting the historical introduction and in his study of the various schools of mathematics, he claims to use "replacement-analysis." In developing his personal theories he employs what he calls "exhibition-analysis."

Although this book is of an introductory nature, to understand it to any degree a certain mathematical sophistication is needed. As a concession perhaps to his nonmathematical readers the author uses a minimum of mathematical and logical notation, and he uses such simple mathematical propositions as " $1 + 1 = 2$ " and "one apple and one apple make two apples" in pursuing his analysis.

L. A. B.

Salzburger Jahrbuch für Philosophie. Vol. IV. Salzburg, Austria:
Anton Pustet, 1960. Pp. 280. Paper.

This fourth volume consists of four major studies, a section of miscellaneous reports and discussion, some book reviews, and indices. The first article, by Dom Beda Thum, o.s.b., "Wertphilosophie und Metaphysik," deals with some problems raised by the philosophy of values. The author points out that the recent insistence on the ideality of values would seem to remove them from the realm of being, a consequence which some value theorists have not failed to draw. He tries to rejoin value and being by a twofold analysis, one of the "good," according to which good is an attribute of being, and even moral good is a fullness of being, and the other of appetite, in which he stresses the willing of self in all willing. The second article, by Dom Maternus Hoegen, o.s.b., "Das Sein und der Mensch bei Martin Heidegger," is an extensive investigation of Heidegger's views on being, existence, and related ideas (pp. 29-112). The author begins with the epistemological and methodological presuppositions of Heidegger, mainly a study of his meaning of "phenomenology." Next comes a study of the existential experience as a being in the world. This is followed by an analysis of the world as experienced reality, its biological and ontological structures. From this consideration arises an analysis of experienced being: existence as the exemplar of being as distinguished from essence, its characteristics as deriving from the world as a whole, its necessarily historical and mysterious nature, which yet can reveal only what is immanent in it. The final section deals with the metaphysical level of the problem of being. Here the author looks for a solution in a dynamic view of being as act, in which *esse* is activity or perhaps better "super-activity." The third paper, by Franz Furger, "Die Struktureinheit der Wahrheit bei Karl Jaspers," is a very formal analysis of Jaspers's ideas on truth. All these various ideas are compared with each other, classified, and schematized. In addition, various connected problems are discussed: error, knowledge of God, and so forth. The fourth paper, by Dom Albert Auer, o.s.b., "Naturrechtsdenken im heutigen Protestantismus," is a very useful survey of current views, with detailed bibliographical references. Though the study is restricted almost entirely to German publications, much of this discussion has been carried on by them, and they are more likely to be unknown to other students of the natural law.

G. P. K.

Soziologie. Geschichte und Hauptprobleme. By Leopold von Wiese. "Sammlung Goschen," Vol. 101. 6th ed. Berlin: Walter de Gruyter & Co., 1960. Pp. 175. Paper, DM 3.60.

This edition contains new footnote material and a new tenth chapter, dealing with general sociology in Germany since 1955; the rest of the material is a corrected reprinting of the edition of 1954.

The approach is mainly historical. The first chapter treats of the nature of sociology as a study of the happenings that take place among men. The second chapter considers the origin of sociology as a science. The third indicates the various divisions and trends. Chapters Four to Nine take up the historical development in France, Britain and America, and in Germany.

In spite of its brevity, this work is thorough and could serve as an excellent introduction to general sociology, especially for one who did not intend to specialize in that field.

G. P. K.

Studi in Onore di M. F. Sciacca. Ed. M. T. Antonelli and M. Schiavone. Milan: Marzorati Editore, 1959. Pp. 248.

This is one of several *Festschriften* presented to the Italian Catholic philosopher, M. F. Sciacca, on the occasion of his twentieth year of university teaching. All but two of the fourteen contributors are non-Italians—an impressive testimonial to Sciacca's international stature. He has lectured frequently in France and Spain, and the *Giornale di Metafisica* which he edits has a wide circulation in Europe and Latin America. The only contribution in English is A. R. Caponigri's essay on the proof of God's existence drawn from the nature of truth, a favorite approach used by Sciacca. Caponigri casts the argument into loosely syllogistic form. "There is nothing in man or in the world superior to mind; the mind intuits immutable and absolute truths which are superior to it; *therefore*: the absolute immutable Truth, which is God, exists." Almost all the other essays converge eventually upon this inference. Its Augustinian background is discussed by W. Eborowicz; its descriptive location within a philosophy of interiority is a theme developed by Aimé Forest and others; and the problems which it raises concerning the mind's capacity for transcending its interiority are considered by Gallo Galli. Teachers of philosophy who are looking for a modern presentation of the argument from truth will find it here, along with some sympathetic criticisms which keep within the bounds of philosophy of the spirit.

J. C.

Studi sulla Coscienza Etica e Religiosa del Seicento: Esperienza e Libertà in J. Locke. By Romeo Crippa. Milan: Marzorati Editore, 1960. Pp. 163. L. 1,200.

Crippa makes a fresh reading of Locke which challenges some of the conventional interpretations. He comes to Locke with a twofold preparation distinguishing him from the older commentators. First, his own philosophical background is that of the Italian philosophy of spirit; second, he uses the biographical and philosophical materials on Locke which were first published in the nineteen-fifties. Predictably, the result is a new and stimulating view of Locke's significance.

For one thing, the main stress is not placed upon the epistemology of the *Essay* but upon the moral and religious thoughts expressed in Locke's other writings. This accords with the Lockean purpose of using the way of ideas as an instrument rather than a climax in philosophy. In the moral-social area, Crippa brings out some neglected facets. For instance, the aim of religious toleration is not only to achieve peace (that desperately sought goal of seventeenth-century thinkers and statesmen) but also to cultivate an atmosphere of friendship where men can discuss their religious differences and attend jointly to their social needs. The author also treats more seriously than usual Locke's declared aim of trying to convince the Socinians about the truth of Christ's divinity.

On all these issues, more detailed analyses are still required. However, is it to Crippa's credit to raise them and thus force us to reconsider some evidence telling against the usual deistic portrait of Locke.

J. C.

Studies in Medieval Thought, I, 1958; II, 1959. [Japanese text; summaries in English, French, or German.] Tokyo: Tokyo Univ., 1958, 1959. Vol. I, no price given; Vol. II, 300 yen.

Studies in Medieval Thought is an annual publication of the Japanese Society of Medieval Philosophy. As the Society has grown in numbers, it has also increased the scope of its activities. The first two issues of this journal show an interest in all the basic problems of Thomistic philosophy, as well as more general articles and studies in other medieval thinkers such as Ockham, St. Augustine, and Siger of Brabant. In the first volume, there are three articles on St. Thomas's philosophy (on essence and existence, on ideas, on connaturality), two on St. Augustine (the meaning of *intellectus*, the light of nature and of grace), one on Siger of Brabant and his *Quaestiones in II et II De Anima*, and one on the recent work in medieval philosophy published by Germans. The second volume has six

articles on St. Thomas, five on St. Augustine, on each on St. Bonaventure and Ockham, and one on the medieval treatment of history. The level of these articles is remarkably high, and in general the approach is one that can be understood and followed easily.

G. P. K.

***Le Travail selon saint Jean Chrysostome.* By Lucien Daloz. Paris: P. Lethielleux. Pp. viii + 194. Paper, Fr. 870.**

Is there a theology of labor in the writings of the Church Fathers? Following a careful rereading of the early Fathers, Daloz discovered in the "School of Antioch"—in the primacy it assigned to "practical" over "theoretical" wisdom—the elements and foundation of an economic theology.

Common to the Antiochian Fathers are the following "themes" isolated and found to be most fully developed in the homilies of Chrysostom: (1) God is a laborer who works unceasingly in caring for His creation (John, 5:17); (2) the image of God in man is neither his soul nor his reason but his *dominion* over the rest of creation (Genesis, 1:26); (3) man was made not to contemplate the world but to cultivate and improve it—the meaning of *Imitatio Dei* (Genesis, 2:15); (4) the Fall resulted from idle curiosity and man's failure to busy himself with the tasks assigned him; (5) God's purpose in expelling man from the Garden was to help him avoid idleness by compelling him to labor—such is the meaning of mortality; (6) anyone who displaces his punishment for original sin upon the shoulders of others, by making them labor toward his own support, violates the purpose of original punishment; and (7) the purpose of labor is not obedience to God but to provide the wherewithal to minister to the indigent and to those who cannot labor.

Besides these common "themes," Daloz also examines those that are peculiar to Chrysostom: (1) manual labor is a duty and a "law of nature" equally binding upon all (Acts, 20:33-35; I Thessalonians, 1:9, 4:11-12; II Thessalonians, 3:6-13; Ephesians, 4:28); (2) spiritual works consist—in their order of perfection—in giving away all that one has, in working with one's hands, in providing for the needs of others, and in receiving nothing to which one has not a right (Matt., 25:31-46; Luke, 18:18-22); (3) spiritual labor is pre-eminently the subordination of material labor to a moral purpose; and (4) the arts, properly speaking, consist of techniques helpful in maintaining life (which excludes the "fine arts"), the most important art being agriculture.

The value of a theology of labor should not be underestimated: accord-

ing to Daloz, it fulfills a vital function in making Christianity relevant to the labor movement and its struggle for social justice.

D. C. H.

L'Unité de l'homme et l'expérience qui la révèle d'après saint Thomas d'Aquin. By Coloman Viola, S.J. Louvain: Home Universitaire "Cardinal Mindszenty," 1957. Pp. 47. Paper.

The author studies the works of St. Thomas chronologically and finds a definite development in the assertion and explanation of the unity of man. In the early works, the unity of man is argued from vegetative and sensitive activity; intellection seems to be an activity of the soul alone in which the body shares only by presenting the object. The unity of man is expressed mostly by means of the doctrine of the unicity of form in a sensible substance. Beginning with the *Summa Theologiae* the act of intellection itself is asserted of the concrete subject, and the evidence for unity finds its final expression in the *Commentary on Aristotle's De Anima*. Here and in later works, the evidence is pointed in the expression "This man understands." Remembering that for St. Thomas "this man" is the singular demonstrable substance, we can see that the assertion amounts to saying, "This individual material thing (this body) understands." St. Thomas's way of arguing this fact is interesting; if, he says, your interlocutor denies this, he either understands his denial or not; in the second case, the argument is closed but not refuted; in the first case, he also is an instance of a singular sensible subject understanding. The author goes on to show how from this same experience St. Thomas draws his doctrine of the unity of man and the distinction of the soul from the body.

This brief study is important because it points out how St. Thomas became progressively more experiential in one of the crucial points of his philosophy (which is crucial for any philosophy): the nature of man himself.

G. P. K.

Wirklichkeit und Wirklichkeiten. Aufsätze und Vorträge. By Wilhelm Weischedel. Berlin: Walter de Gruyter & Co., 1960. Pp. 286.

This collection of articles and addresses has more unity than might be expected from other books of the same type. The author studied under Heidegger, and this influence is strongly noticeable throughout. Yet there are differences, both in style and content.

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The papers are grouped into four groups. In the first appear four historical papers: on progress and error in Western philosophy, on Pascal and the limits of philosophy, on Voltaire and the problem of history, and on German philosophy between the two wars. The second group is the most profoundly philosophical and deals with metaphysics and philosophical theology. The first of six papers takes up the question, Is there a metaphysical experience? and answers it affirmatively, basing the analysis largely on the "questionability" of things and the self, where the influence of Heidegger is evident. In dealing with the "feeling of unreality" the author clearly distinguishes between reality as *Wirklichkeit* and as *Realität*. He uses this distinction to show that the modern problem is not epistemological (that is, "Might everything be a sheer fiction?") but "existential" (that is, "How do 'real' things get their 'reality-for-me'?"). He argues that this feeling is a necessary result of man's nature as reflective, that in becoming aware of the world and himself he necessarily becomes estranged from the world and from himself. He takes it that this estrangement is a fact and that this fact must be taken into account not only by philosophy but also—and perhaps even more—by theology. The problematic of faith that he uses is that of theologians like Barth, Bultmann, Gogarten; and this very fact shows something about his basic understanding of man in his world. Yet he is not simply a Barthian or simply a follower of Heidegger, for he does believe in the possibility of a philosophical theology (indeed, he promises a forthcoming book on this subject). His philosophical intuition thus seems somewhat culturally conditioned, though by no means thereby totally invalidated.

The third section deals with the place of art, especially contemporary art, in the life of man; and he questions, on basic human grounds, the humaneness of some movements in modern art. The fourth section has articles on ethical and cultural problems: conscience, the image of man, right and justice, the problem of the atom bomb. A Berliner has perhaps the best reasons for being disturbed about this problem!

This is an important book for metaphysicians, ethicists, and, in a somewhat indirect way, for theologians. As existentialist writings go, this book is remarkably easy to read, lacking the affected peculiarities of style and intellectual attitude that some writers seem to consider an infallible passport to profundity.

G. P. K.

Wunder. Eine Untersuchung über ihren Wirklichkeitswert. By Georg Sigmund. Berlin: Morus-Verlag, 1958. Pp. 160. DM 13.50.

This work is primarily a work of apologetics, inasmuch as it concerns itself with a consideration of the fact of miraculous occurrences. The central portion of the book deals with the miracle of Lourdes. However, one chapter, entitled "Miracles and Nature," deals with the meaning of the term "laws of nature," with the supposition of "unknown powers of nature," and with the notion that miracles would be "contrary" to nature. This chapter, though illuminating, is rather brief.

G. P. K.

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